Using Your Macintosh™ Classic™

User's Guide

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Using Your Macintosh™ Classic™

User's Guide

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Contents

Radio and television interference xiv

Preface About This Book xv

How to use this book xv

Some conventions used in this book xvi

About the other learning materials xvii

Chapter 1 Getting Started With Your Macintosh Classic 1

Plugging in the computer 2

Connecting the keyboard and mouse 3

Taking the tour 4

Starting the tour 5

Quitting the tour 6

A checklist of skills taught by the tour 7

About startup disks 8

Starting up from a floppy disk 9

Preparing a hard disk as a startup disk 11

Connecting the hard disk 11

Initializing the hard disk 11

Installing system software on the hard disk 14

Starting up from a hard disk 16

Shutting down the computer 17

What next? 18

Chapter 2 Basic Macintosh Operations 21

Using the mouse 22
- Pointing 23
- Clicking 23
- Double-clicking 24
- Dragging 25

Working with icons 25
- Selecting an icon 25
- Dragging an icon 26
- Selecting multiple icons in one area 27
- Selecting multiple icons in separate areas 28
- Selecting all the icons in a window or on the desktop 28
- Opening an icon 28
- Discarding an icon 29

Working with windows 31
- Moving a window 31
- Resizing a window 32
- Enlarging a window to full size 33
- Making a window active 34
- Closing a window 35
- Viewing the content of a window 36
- Scrolling continuously 37
- Scrolling to a specific part of a window 38
- Scrolling by the windowful 39

Using menus 40
- Pulling down a menu 40
- Choosing a menu command 41
- Using a submenu 43
- Using a pop-up menu 45

Responding to messages on the screen 47
- Using a directory dialog box 48
- Responding to an alert box 49

Basic editing on the desktop 50
Changing all of an icon's name 50
Selecting part of the text in an icon's name 52
Replacing selected text in an icon's name 53
Deleting selected text from an icon's name 53
Inserting text in an icon's name 54
Using special keys on the keyboard 55

Chapter 3 Creating Startup Disks 57

Preparing your system software 58
Checking system software that is already installed 59
Installing system software 60
Creating a customized system 63
Making an extra startup disk 66
Creating a small system 68
Updating to a new version of system software 69
Specifying items to be opened at startup 69
Selecting one startup program or document 70
Selecting multiple startup items 71

Chapter 4 Working With Application Programs 75

Preparing to use a program 76
Installing a program 76
Starting a program 78
Creating a new document in a program 78
Opening an existing document while working in a program 79
Opening an existing document while working on the desktop 80
Editing documents 81
Editing text 81
Copying text and images 81
Inserting copied text and images within a document 82
Copying text and images between documents in different programs 83
Deleting text and images 84
Undoing an editing action 85

Saving documents 86
Saving a new document on the current disk 86
Saving a revised document 88
Saving a document under a new name 89
Saving a second copy of a document in a different location on the same disk 90
Saving a copy of a document onto a different disk 93
Saving text and images in the Scrapbook for easy access 95
Knowing where you are on the Macintosh 97
Returning to the desktop from a program 99
Managing multiple programs using MultiFinder 100
MultiFinder's memory requirements 101
Turning MultiFinder on 101
Switching programs or desk accessories with MultiFinder 103
Starting a new program when using MutliFinder 104
Managing system memory 105
Checking the amount of RAM in your Macintosh 105
Checking the RAM available for programs in MultiFinder 106
Clearing system memory for efficient operation 106
Changing the memory allocation for a program 107
Adjusting the RAM cache 108
Ending a work session 110
Quitting a program 110
Backing up the session's work 110
Shutting down the computer 111

Chapter 5 Organizing Files and Folders 113

Handling files and folders 114
Moving a file or folder to a different location on the same disk 114
Copying a file or folder onto another disk 115
Copying a file or folder on the same disk 115
Renaming a file or folder 116
Using folders to organize your work 117
Creating and naming folders 118
Placing items inside folders 119

Locating files and folders 120
Moving quickly through levels of folders when using a program 120
Moving to a higher level 122
Moving to a lower level 123
Using Find File to locate files or folders by name or partial name 123
File and folder housekeeping 126
Putting away items on the desktop 126
Cleaning up the icons in a window or on the desktop 126
Discarding files and folders 127
Getting directory information 128
Displaying items by icon, name, size, date, or kind 128
Getting information about an icon 129

Chapter 6 Printing Documents 131
Getting ready to print 132
Placing printer drivers in the System Folder 132
Choosing a printer 133
Selecting Page Setup options 134
Printing your work 136
Printing from within a program 137
Printing from the desktop 138
Printing a directory of disk or folder contents 139
Printing while using the computer for other work 140
Using background printing 140
Managing printing jobs 142

Chapter 7 Managing Disks and Disk Drives 145
Using floppy disks 146
Disk capacities 146
Inserting a floppy disk 148
Ejecting a disk while using the desktop 149
Ejecting a disk from within a program 150
Initializing and naming a floppy disk 151
Erasing a floppy disk 154
Renaming a floppy disk 155
Backing up a floppy disk 156

Using a hard disk 158
Hard disk precautions 158
Initializing and naming a hard disk for the first time 159
Partitioning a hard disk 161
Erasing a hard disk 163
Renaming a hard disk 164
Backing up a hard disk 164
Startup disk sequence 165
The scanning order for a startup disk 165
Designating which hard disk will be your startup device 166
Protecting information on a disk 167
Locking a floppy disk 168
Locking documents 169

Chapter 8 Personalizing Your Macintosh Classic 171

Adjusting mouse operation 172
Setting the correlation between mouse and pointer movement 172
Setting the double-clicking speed 173
Adjusting keyboard operation 175
Setting the keys' repeat rate 175
Setting the delay before keys repeat 176
Adjusting sound and volume 177
Setting the speaker volume 177
Setting the alert sound 178
Setting time and date 180
Changing the time 180
Changing the date 182
Setting an alert time with the Alarm Clock 183
Changing the look of the desktop 186
Changing the pattern displayed on the desktop 186
Adjusting the blinking of a selected menu item 189
Adjusting the blinking of the insertion point 190
Adjusting screen brightness 191

Adding and removing fonts and desk accessories 192
Installing a font or desk accessory 193
Removing a font or desk accessory 196
Creating a file of fonts or desk accessories 200

Chapter 9 Expanding Your Macintosh System 203

Connecting SCSI devices 204
Setting the SCSI device number 205
Daisy-chaining SCSI devices 207
Connecting non-SCSI devices 209
Connecting a printer 209
Connecting a modem 210
Connecting an external floppy disk drive 211
Connecting Apple Desktop Bus devices 211
Connecting audio devices 213
Using your Macintosh Classic on a network 214

Chapter 10 Maintenance and Troubleshooting 217

Setup and general care 218
All system components 218
Monitor 219
Keyboard 219
Floppy disks 220
Operating environment 221
Cleaning system components 222
Computer and peripheral-device cases 222
Monitor 222
Mouse 222
Testing and repairing a disk 224
Using Disk First Aid to test or repair a floppy disk or a hard disk 224
Using HD SC Setup to test a SCSI hard disk 225
The system clock batttery 227
Avoiding data loss or damage 227

Troubleshooting 229
Computer operation 229
The computer is switched on but the screen is dark 229
When you start up, the screen is bright but the desktop does not appear 230
The mouse moves but the pointer does not move 231
Typing on the keyboard produces nothing on the screen 232
You cannot save anything onto a floppy disk 232
You cannot eject a floppy disk 233
You cannot start up from a hard disk or see its icon 234
The pointer suddenly "freezes" on the screen 235
A dialog box with a bomb appears 236
A rectangular box with a greater than (>) symbol appears on the screen 237
Printer operation 237
You give the command to print a document and the printer does not respond 237
You print a document on a network printer and it causes the printer to restart or to display an error message on the computer's screen 238
General tips 239
Start over 239
Make certain that all parts of your system software are from the same version 240
Make certain that your programs are in good working order 240
Create free space on the startup disk 241
Take your time 242
Back up your programs and documents 243
Service and support 244

Appendix A Macintosh Classic Keyboard and Character Sets 247

Keyboard layout 247
Optional characters 250
Viewing optional characters with Key Caps 250
Typing international characters 252

Appendix B MacroMaker Command Files 253

Installing MacroMaker 254
Creating macros with MacroMaker 255

Appendix C Exchanging Disks and Files With MS-DOS Computers 259

Using Apple File Exchange for MS-DOS disks and files 260
Initializing an MS-DOS disk in a SuperDrive 260
Converting files to and from MS-DOS format 263
Other file-conversion options 267
Getting more information about Apple File Exchange options 268
Converting Apple II files with Apple File Exchange 268

Appendix D Special Aids for Using the Mouse, Keyboard, and Screen 269

Keyboard and mouse assistance with Easy Access 270
Easier keyboard use with Sticky Keys 270
Easier mouse use with Mouse Keys 272
Easier screen viewing with CloseView 274

Appendix E Technical Specifications 277

Main unit 277
- Processor 277
- Memory 277
- Disk drives 277
- Video display 278
- Interfaces 278
- Sound generator 278
- Input 278
- Clock/calendar 278
- Fan 278

Keyboard 279
Mouse 279
Size and weight 279
Apple Desktop Bus power requirements 279
RAM configurations 280
Pin assignments 280
- Apple Desktop Bus (ADB) 280
- Modem and printer ports 281
- SCSI port 282
- Disk drive port 283
- Audio jack 284

Environment 284
- Operating temperature 284
- Storage temperature 284
- Relative humidity 284
- Altitude 284

Programmer's switch 285
Using the Macintosh Classic overseas 286

Appendix F Where to Get More Information About Your Macintosh Classic 287

Macintosh user groups 288

Technical information 288

Apple Technical Library 289

Apple Communications Library 289

APDA 289

Assistance for hardware and software developers 290

Appendix G Glossary 291

Index 307

Radio and television interference

The equipment described in this manual generates and uses radio-frequency energy. If it is not installed and used properly—that is, in strict accordance with Apple's instructions—it may cause interference with radio and television reception.

This equipment has been tested and complies with the limits for a Class B computing device in accordance with the specifications in Part 15 of FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that the interference will not occur in a particular installation.

You can determine whether your computer is causing interference by turning it off. If the interference stops, it was probably caused by the computer or one of the peripheral devices.

If your computer system does cause interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the computer to one side or the other of the television or radio.
- Move the computer farther away from the television or radio.
- Plug the computer into an outlet that is on a different circuit from the television or radio. (That is, make certain the computer and the television or radio are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with a coaxial cable lead-in between the antenna and the television.

If necessary, consult your authorized Apple dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet, prepared by the Federal Communications Commission: *How to Identify and Resolve Radio-TV Interference Problems* (stock number 004-000-00345-4). This booklet is available from the U.S. Government Printing Office, Washington, DC 20402.

△ **Important:** Changes or modifications to this product not authorized by Apple Computer, Inc., could void the FCC certification and negate your authority to operate the product.

This product was tested for FCC compliance under conditions that included the use of shielded cables and connectors between system components. It is important that you use shielded cables and connectors to reduce the possibility of causing interference to radios, television sets, and other electronic devices. For Apple peripheral devices, you can obtain the proper shielded cables from your authorized Apple dealer. For non-Apple peripheral devices, contact the manufacturer or dealer for assistance. △

About This Book

This manual is your sourcebook for using the Apple™ Macintosh™ Classic™ computer. It is a "working reference"—that is, it provides step-by-step instructions for setting up your computer and for all the tasks you are likely to perform with it.

How to use this book

Follow the instructions in the first chapter of this book to set up your Macintosh Classic and to start up the tour disk, *Macintosh Basics,* which teaches you many of the basic skills you need to use the computer. Read Chapter 2 for a quick review of the techniques taught by the tour disk and for an introduction to other important skills.

Use Chapters 3 through 10 and the appendixes as day-to-day reference material for using additional features of the Macintosh. These chapters and appendixes are arranged for "random access"—in other words, you need not read them sequentially. When you want to learn how to perform a particular task, you can turn directly to the instructions for that task. (Use the table of contents or the index to locate the topic you want.)

The instructions for each task in this book are presented in numbered steps, with each step printed in boldface type. Text in plain type, which follows many steps, describes what happens when you follow the step or gives other useful information.

If you wish to accomplish a task quickly, you can read only the boldface text and skip the plain text. As a further help, figures throughout the book show what you see on the screen while performing tasks.

Some conventions used in this book

Throughout the book, several typographical conventions are used to alert you to particular types of information.

❖ *Another way to perform this action:* Paragraphs that begin with this symbol (❖) describe alternate methods of taking an action. ❖

Because many tasks are related to other tasks, this book contains numerous cross-references. Here is a sample:

➤ *See also:* • "Adjusting Mouse Operation" in Chapter 8

Look for these other visual cues:

△ **Important:** Text set off in this manner presents important information. △

▲ **Warning:** Warnings like this one alert you to situations in which you might damage your equipment or lose data if you do not follow the instructions carefully. ▲

About the other learning materials

Using Your Macintosh Classic is part of a set of learning materials provided with your Macintosh. The other materials are

- a training disk, *Macintosh Basics,* which provides hands-on instruction and practice for new users of the Macintosh
- a booklet, *HyperCard Basics,* which teaches you the basic skills you need to use the version of the HyperCard® program included with your Macintosh Classic

1

Getting Started With Your Macintosh Classic

The instructions in this chapter explain how to set up your Apple Macintosh™ Classic™ computer and begin learning how to use it. Even if you have never used a Macintosh computer before, the instructions in this chapter will get you up and running quickly.

Plugging in the computer

In addition to providing power to the computer, plugging in the Macintosh Classic grounds the computer and protects it from electrical damage while you are setting up.

1. **Plug the socket end of the power cord into the back of the computer.**
2. **Plug the other end of the power cord into a three-hole grounded outlet or power strip.**

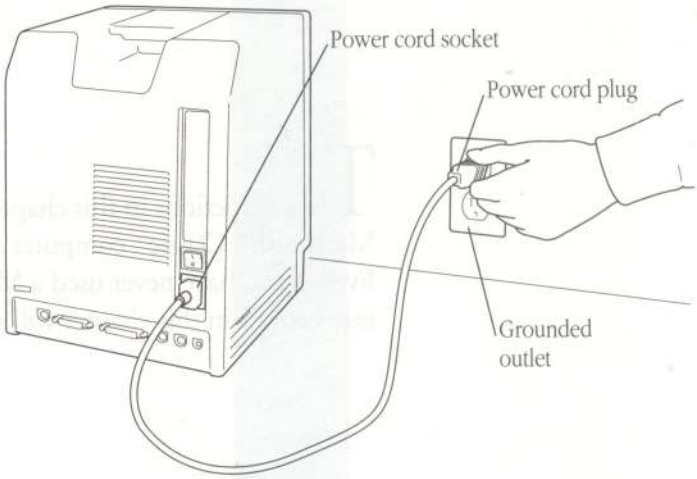


Figure 1-1 Plugging in the Macintosh Classic

Connecting the keyboard and mouse

Follow these steps to connect the keyboard and mouse:

1. **With the keyboard facing you, plug either end of the keyboard cable (flat side of the plug up) into the socket marked with the symbol on the left side of the keyboard.**

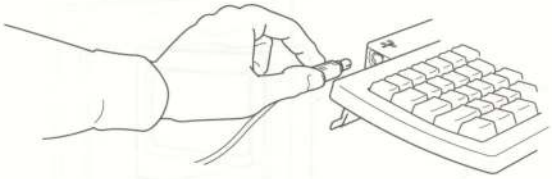


Figure 1-2 Plugging the keyboard cable into the keyboard

2. **Plug the other end of the keyboard cable (flat side of the plug up) into the socket marked with the symbol on the back of the Macintosh Classic.**

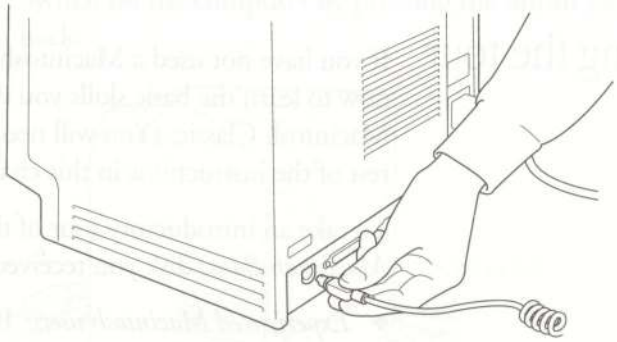


Figure 1-3 Plugging the keyboard cable into the computer

3. **Plug the mouse cable into the socket on the right side of the keyboard.**

   If you are left-handed, you may want to plug the keyboard cable into the socket on the right side of the keyboard and the mouse cable into the socket on the left side of the keyboard.

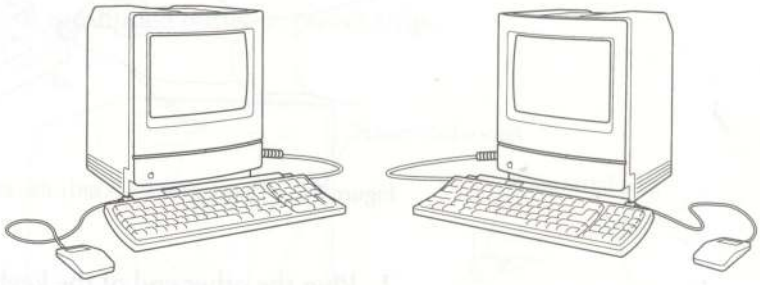


Figure 1-4 Two possible arrangements for keyboard and mouse

Taking the tour

If you have not used a Macintosh computer before, take time now to learn the basic skills you will need to start using your Macintosh Classic. (You will need these basic skills to follow the rest of the instructions in this chapter.)

To take an introductory tour of the Macintosh Classic, use the *Macintosh Basics* disk you received with your computer.

❖ *Experienced Macintosh users:* If you have already mastered basic Macintosh skills, you may want to skip using the tour disk. All the skills taught in the tour are also covered in Chapter 2, "Basic Macintosh Operations," in case you need a quick review. ❖

Starting the tour

Follow these steps to start the tour:

1. **Insert the *Macintosh Basics* disk in the internal floppy disk drive, metal end first and label side up.**

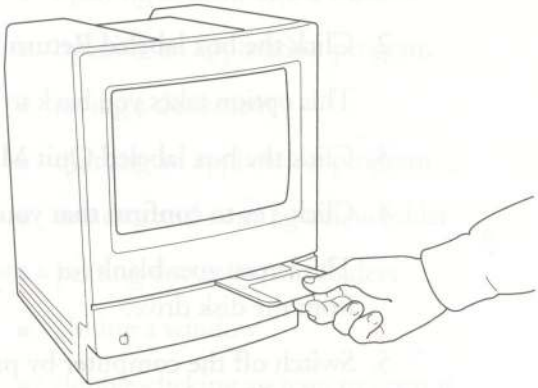


Figure 1-5 Inserting the *Macintosh Basics* disk

2. **Switch on the computer by pressing the on/off switch on the back.**

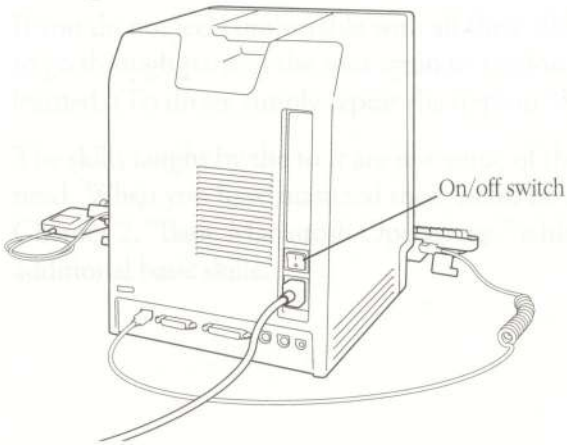


Figure 1-6 Switching on the computer

A beep lets you know the computer has started, and in a few moments you see a display welcoming you to the *Macintosh Basics* disk. Just follow the instructions you see on the screen.

Quitting the tour

When you want to quit the tour, follow these steps:

1. **From any screen, click the button labeled Topics.**

   This action takes you back to the menu of topics for that section of the tour.

2. **Click the box labeled Return to Main Topics.**

   This option takes you back to the tour's Main Topics Menu.

3. **Click the box labeled Quit Macintosh Basics.**

4. **Click Yes to confirm that you want to quit.**

   The screen goes blank for a moment, and the tour disk is ejected from the disk drive.

5. **Switch off the computer by pressing the on/off switch on the back.**

A checklist of skills taught by the tour

Here is a list of the skills you should have learned from the *Macintosh Basics* disk:

- using the mouse to point, click, and drag
- opening an icon into a window
- opening an application program
- saving a document
- quitting an application program
- creating and naming a new folder
- putting documents in folders
- closing a window
- double-clicking an icon to open it
- scrolling to see a different part of a window's content
- changing the size of a window
- using the Trash to discard items

If you do not feel comfortable with all these skills, you may want to go through parts of the tour again to reinforce what you have learned. (To do so, simply repeat the steps in "Starting the Tour.")

The skills taught by the tour are just some of the basics you will need. When you have mastered these skills, be sure to read Chapter 2, "Basic Macintosh Operations," which introduces additional basic skills.

About startup disks

The Macintosh Classic requires certain software in order to start itself up. Any disk that contains this software is called a *startup disk.* When you try to start up the computer with a disk that is not a startup disk, the computer displays a picture (called an *icon*) of a disk with an 'X' on it. Then the computer ejects the disk and displays the icon of a disk with a blinking question mark.

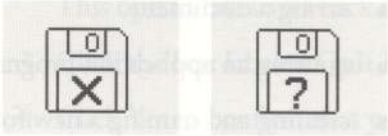


Figure 1-7 What you see when trying to start up with a nonstartup disk

The software that the computer needs in order to start itself up is stored in a folder called the *System Folder.* (When you look at the contents of the disk, you will see the icon of the System Folder.) Because the computer expects to find certain files in the System Folder, you should not use the name *System Folder* for any other folders on your startup disks.

Figure 1-8 The System Folder icon

Any disk that includes a System Folder is a startup disk; any disk that does not include a System Folder cannot be used to start up the computer—although it can be used after you have started up the computer.

Many floppy disks come with a System Folder already on them and are ready to be used as startup disks. For example, the *Macintosh Basics* and *Macintosh System Startup* disks you received with your computer are already startup disks. So are many program disks—because the software publisher has included a System Folder on the disk. And you can make *any* floppy disk a startup disk by installing a System Folder on it, as explained in Chapter 3.

If you have a hard disk, it is most convenient to use it as your startup disk, as explained in "Preparing a Hard Disk as a Startup Disk" later in this chapter.

Starting up from a floppy disk

To start up the computer from a floppy disk, follow these steps:

1. **Insert the startup floppy disk in the internal floppy disk drive, metal end first and label side up.**
2. **Switch on the computer.**

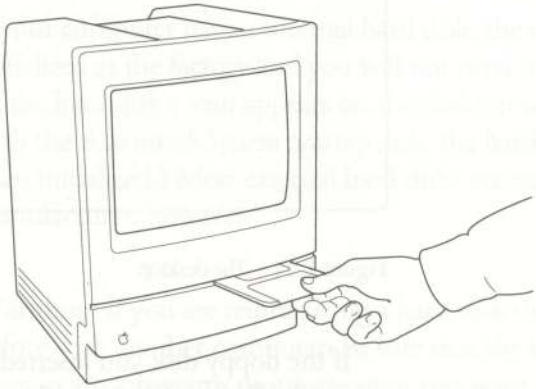
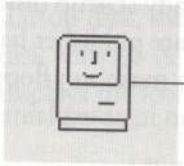


Figure 1-9 Inserting a startup floppy disk

In a moment you should see the icon of a Macintosh computer with a smiling face—the "happy Macintosh" icon.



"Happy Macintosh" indicates that the system software is being loaded.

Figure 1-10 The "happy Macintosh" icon

Next you should see the "Welcome to Macintosh" screen, and then a few moments later the screen in Figure 1-11, called the *desktop*.

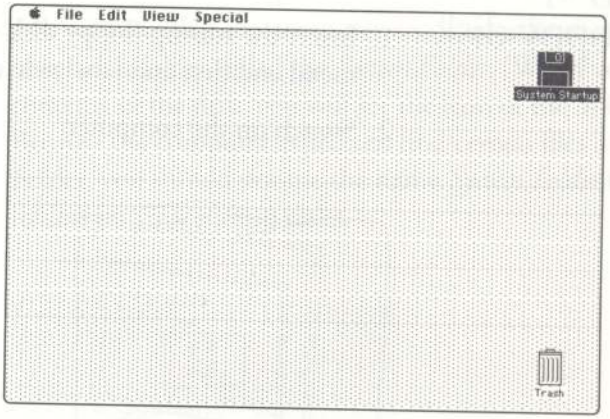


Figure 1-11 The desktop

If the floppy disk you inserted is not a startup disk, you do not see the "happy Macintosh" icon or the desktop. Instead, the computer displays the icon of a disk with an 'X', then ejects the disk and displays the icon of a disk with a blinking question mark. (See Figure 1-7.) Remove the disk from the disk drive and insert a startup disk in its place.

Preparing a hard disk as a startup disk

If you have a hard disk, you will probably find it most convenient to make that disk your startup disk. You may need to perform some or all of these tasks in order to make a hard disk your startup disk:

- Connect the hard disk to the computer (external hard disks only).
- Initialize the hard disk (if the hard disk has not already been initialized at the factory).
- Install system software on the hard disk (if system software has not already been installed at the factory).

Connecting the hard disk

If you have an external hard disk, you must connect it to your Macintosh Classic. For instructions, see your hard disk manual or "Connecting SCSI Devices" in Chapter 9 of this manual.

Initializing the hard disk

If your hard disk has not yet been *initialized*, you will need to initialize it. Initializing (also called *formatting*) is a process that prepares the disk's surface to receive information.

If your computer has an internal hard disk, the disk was probably initialized at the factory and you will not need to initialize it again. (If the hard disk's icon appears on the desktop when you start up with the *Macintosh System Startup* disk, the hard disk has already been initialized.) Most external hard disks are not initialized by the manufacturer, however.

▲ **Warning:** If you are reinitializing a hard disk that has been used before with another computer, be sure that the disk does not contain any programs or information you want to keep. Everything on a hard disk is erased during the initialization process. ▲

Follow these steps to initialize a hard disk:

1. **If the hard disk is external, switch it on.**
2. **Switch on the computer.**
3. **Insert the *Macintosh System Startup* disk in the internal drive.**
4. **Open the System Startup disk icon.**

   Click the System Startup icon to select it, and then choose Open from the File menu. (Or just double-click the icon.)

5. **Open the Apple HD SC Setup icon.**

   Click the Apple HD SC Setup icon to select it, and then choose Open from the File menu. (Or just double-click the icon.)

Figure 1-12 The Apple HD SC Setup icon

In a moment, the program's main dialog box appears.

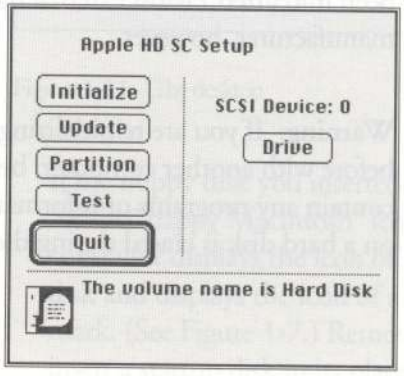


Figure 1-13 The main dialog box of the Apple HD SC Setup program

6. **If you have more than one hard disk connected and you want to initialize a disk other than the one named in the dialog box, click the Drive button until you see the correct name.**

7. **Click the Initialize button to begin initializing.**

   A dialog box appears, asking you to confirm or cancel your decision to initialize.

   If you do not want to proceed, click Cancel.

8. **Click Init to initialize the hard disk.**

   When you click, the pointer becomes a spinning beach ball and the message area of the dialog box reports the status of the initialization. After a while, the computer beeps to signal the end of the process, and a message reports successful initialization. (If you see a report that initialization has failed, begin the process again.)

   Then a dialog box appears, asking you to name the disk.

9. **Type a name for the hard disk, then click OK.**

10. **Click Quit.**

Installing system software on the hard disk

If your computer has an internal hard disk, system software may have been installed on the disk at the factory. (If the computer automatically starts up and displays the desktop when you switch on the power, the system software has already been installed.)

If you have an external hard disk—or an internal hard disk on which system software has not been installed—you must install system software on the disk. To do so, you use the Installer program on the *Macintosh System Startup* disk. Follow these steps:

1. **Open the Installer icon.**

   Click the Installer icon to select it, and then choose Open from the File menu. (Or just double-click the icon.)

   The Installer's Welcome dialog box appears.

2. **Click OK to clear the Welcome box.**

   The Installer's main dialog box appears.

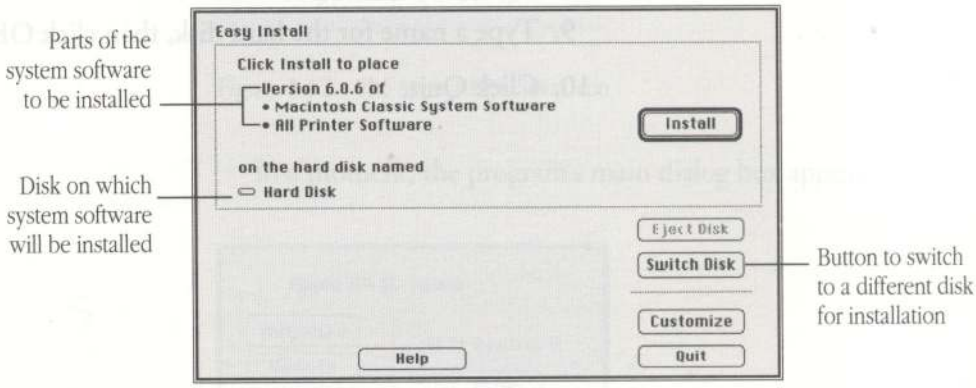


Figure 1-14 The main dialog box of the Installer program

3. **If you want to install system software on a disk other than the one named in the dialog box, click the Switch Disk button until you see the correct name.**

4. **Click Install.**

   The Installer begins to install the system software. Messages on the screen report the progress of the installation and let you know when you need to swap disks.

5. **Whenever the computer prompts you, insert the *Macintosh System Additions* disk.**

   When the computer needs information from the *Macintosh System Additions* disk, it ejects the *Macintosh System Startup* disk and displays a message asking you to insert the other disk.

   If you want to cancel the installation, click the Stop button.

6. **When you see a message reporting that the installation was successful, click Quit.**

   The Installer window closes. (If you see a message saying that the installation was not successful, you will need to begin the process again.)

7. **Choose Restart from the Special menu to begin working with your new startup disk.**

   The computer restarts, using the hard disk as its startup disk. (The computer ejects the *Macintosh System Startup* disk when it restarts; you do not need to insert this disk again.)

   If this is the first time system software has been installed on the hard disk, a dialog box asks you to name the Macintosh.

8. **Type a name in the dialog box—your name is fine—and click OK.**

Starting up from a hard disk

Once you have prepared a hard disk for use as a startup disk, it is easy to start up from that disk.

If the startup hard disk is internal, simply switch on the computer. The computer automatically starts up from the internal hard disk, and in a few moments you see the desktop.

If the startup hard disk is external, follow these steps:

1. **Switch on the hard disk.**
2. **Wait a few seconds until the hard disk comes up to full speed.**
3. **Switch on the computer.**

   In a few moments you see the desktop.

Shutting down the computer

When you are ready to shut down the computer, follow these steps:

1. **Choose the Shut Down command from the Special menu.**

   Choosing Shut Down is an important preliminary step to switching off the computer's power. It prepares the hard disk (if you have one) and the system software for shutdown.

Figure 1-15 Choosing the Shut Down command from the Special menu

   When you choose Shut Down, the computer ejects any disk in a floppy disk drive.

2. **When a message on the screen tells you that it is safe to do so, switch off the computer.**

What next?

When you feel comfortable with the skills covered on the *Macintosh Basics* disk and in the next chapter, you are ready to start using the computer to do your own work. There are several things you may want to do next:

- Connect any optional devices (such as a printer, a modem, or an external floppy disk drive) you purchased for use with your computer. For instructions, refer to Chapter 9 of this manual, or read the manual supplied with each device.
- Make backup copies of the disks that came with your computer, and of any program disks you have purchased. (You will need an initialized disk for each backup copy.) For instructions, see Chapter 7 of this manual.
- Create one or more startup floppy disks for use with the computer (if you do not have a hard disk). For instructions, see Chapter 3 of this manual.
- Explore the HyperCard™ program that comes with your Macintosh Classic. For more information, see the accompanying booklet, *HyperCard Basics.*
- Start using any programs you purchased for use with your computer. See the manuals that accompany the programs for instructions on their installation and use.

The rest of this manual is designed for your ongoing use as a reference guide to the Macintosh Classic. Although you need not read any more of this manual right away, you may want to flip through it now so that you will know what topics it covers.

If you encounter any problems in using the computer, refer to Chapter 10, "Maintenance and Troubleshooting" (or to the appropriate sections of your software manuals) for possible solutions. If those troubleshooting tips do not solve the problem, consult an experienced Macintosh user or your authorized Apple dealer.

2

Basic Macintosh Operations

The Macintosh Classic computer is designed to be easy to use. Its screen presents you with a simulated desktop on which you can see and manipulate *icons*—graphic depictions of application programs, documents, disks, file folders, and other parts of your system and the information you work with.

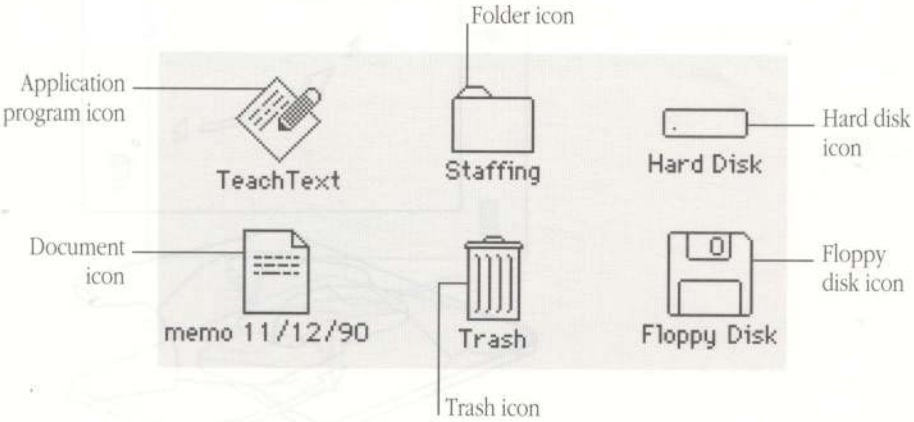


Figure 2-1 Examples of Macintosh icons

You use about two dozen simple operations to work with your Macintosh Classic. Because most of these operations are the same in every program, you can quickly become a proficient Macintosh user.

This chapter introduces the standard Macintosh operations and provides brief instructions for performing each one. If you are new to the Macintosh, you will probably want to use the tour disk, *Macintosh Basics,* before reading this chapter. (See Chapter 1 for instructions.) If you are already familiar with the Macintosh, you may want to review this chapter before beginning your work.

Using the mouse

You use the *mouse*—a kind of pointing device—to initiate most operations on the Macintosh. When you move the mouse on your work surface, a corresponding *pointer*—such as the arrow pointer or I-beam pointer—makes the same movement on the screen.

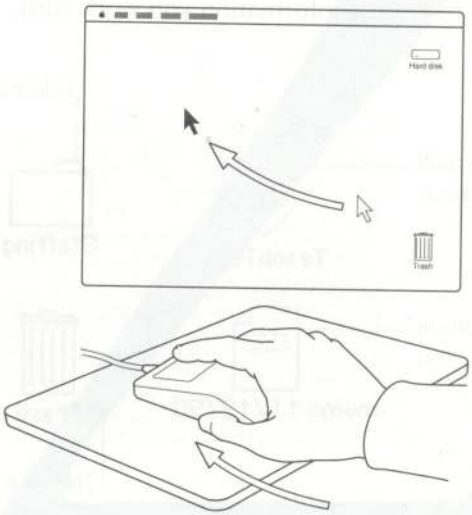


Figure 2-2 Mouse and pointer movement

Pointing

Pointing is simply moving the pointer onto an object or area on the screen.

1. **Grasp the mouse and slide it across the work surface as you watch the pointer on the screen.**

   The pointer's movement corresponds to that of the mouse.

2. **Continue moving the mouse until the tip of the pointer is on the item you want.**

   If you run out of room, you can pick up the mouse and place it at another spot. The pointer on the screen will not move while the mouse is off the work surface.

Clicking

Clicking initiates an action at the pointer's location.

1. **Point to an object on the screen by moving the mouse.**
2. **Without moving the mouse, quickly press and release the mouse button with your index finger.**

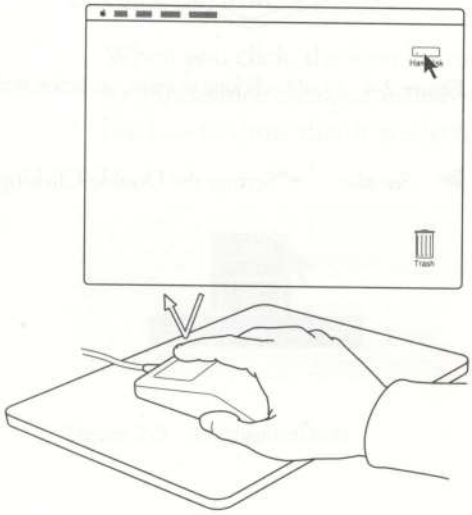


Figure 2-3 Clicking to initiate an action with the mouse

Double-clicking

Double-clicking is a way to display the content of an icon or to start an application.

1. **Point to an object on the screen by moving the mouse.**
2. **Without moving the mouse, press and release the mouse button twice in rapid succession.**

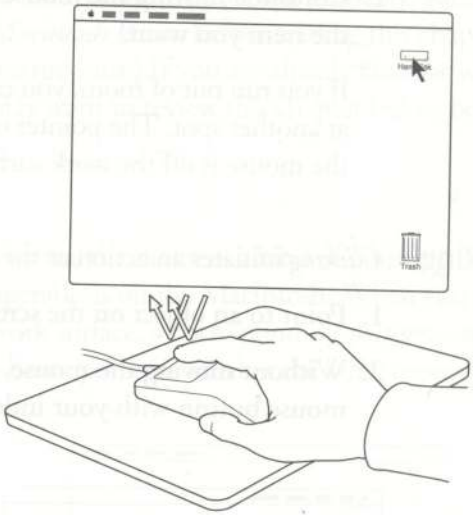


Figure 2-4 Double-clicking to initiate an action with the mouse

➤ *See also:* • "Setting the Double-Clicking Speed" in Chapter 8

Dragging

Dragging is a way to move an object on the screen or move through a pull-down menu.

1. **Position the pointer where you want to begin your next action.**
2. **Press and hold the mouse button.**
3. **Without releasing the mouse button, move the pointer to where you want to end your action.**
4. **Release the mouse button.**

Working with icons

You use the standard mouse operations to manipulate icons on the desktop.

Selecting an icon

You *select* an icon when you want to designate it as the object of some action. When selected, the icon appears *highlighted.*

1. **Point to the icon you want to select.**
2. **Click the icon.**

   When you click, the icon becomes highlighted—that is, its appearance changes, usually from outline form to solid black—to show that it is selected.

Figure 2-5 A highlighted icon

Dragging an icon

Dragging allows you to move an icon on the screen as you move the mouse.

1. **Point to the icon you want to move.**

2. **Press and hold the mouse button.**

   The icon becomes highlighted when you press the mouse button.

3. **Without releasing the mouse button, move the mouse.**

   An outline of the icon moves with the pointer, indicating the location of the icon as you drag.

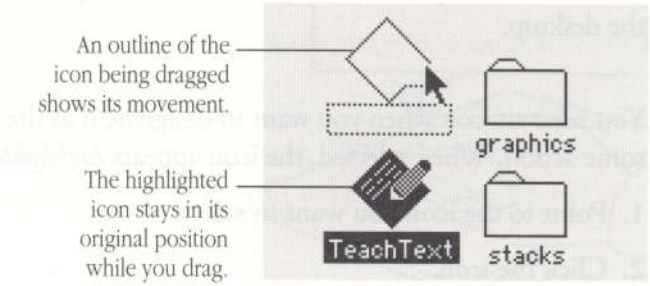


Figure 2-6 Dragging an icon

4. **When the move is complete, release the mouse button.**

   The icon moves to the new location and remains highlighted when you release the button.

Selecting multiple icons in one area

You can drag the pointer to select a group of icons that are located in one window or on the desktop. A dashed rectangle indicates the area covered as you drag.

1. **Place the pointer near one edge of the group of icons you want to select.**

2. **Drag diagonally over the icons.**

   A dashed outline encloses the icons as you drag across them. Dragging diagonally from one corner of the area is most efficient.

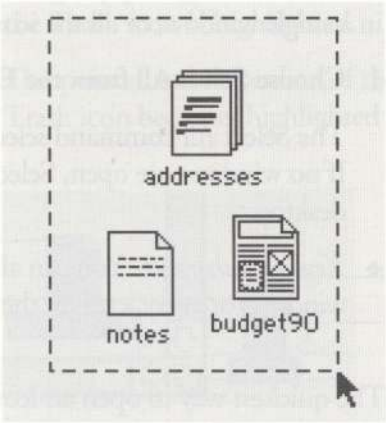


Figure 2-7 Selecting multiple icons in one area

3. **When the icons you want to select are completely or partially inside the dashed outline, release the mouse button.**

   The selected icons become highlighted when you release the mouse button.

Selecting multiple icons in separate areas

You can select icons that are not near each other by clicking each one while holding down one of the Shift keys (called *Shift-clicking*).

1. **Press one of the Shift keys.**
2. **While holding down the Shift key, click each icon you want to select.**

   Each icon becomes highlighted when you click it. Clicking a highlighted icon with one of the Shift keys held down *deselects* (removes the highlighting from) that icon.

Selecting all the icons in a window or on the desktop

You can use a one-step process to simultaneously select all the icons in a single window, or all the icons on the desktop.

1. **Choose Select All from the Edit menu.**

   The Select All command selects every icon in the active window. If no windows are open, Select All selects every icon on the desktop.

❖ *Keyboard shortcut:* You can also select every icon in the active window (or every icon on the desktop) by pressing ⌘-A. ❖

Opening an icon

The quickest way to open an icon is to double-click it.

1. **Point to the icon you want to open.**
2. **Double-click the icon.**

   If the icon does not open, you may not have clicked quickly enough. Double-click again, with the second click following the first as rapidly as possible.

❖ *Another way to open an icon:* You can also select an icon and use the Open command in the File menu (or its keyboard shortcut, ⌘-O). ❖

➤ *See also:* • "Setting the Double-Clicking Speed" in Chapter 8

Discarding an icon

You can clear an icon from the desktop by dragging it to the *Trash,* located at the bottom-right corner of the desktop. A discarded icon remains in the Trash until you choose the Empty Trash command from the Special menu, or until you retrieve the icon by dragging it out of the Trash.

▲ **Warning**: The Trash is emptied automatically when you shut down or switch off the computer, when you start a program, or when you eject a floppy disk from which you discarded any items. ▲

1. **Drag the icon you want to remove onto the Trash icon so that the Trash icon is highlighted.**

   The pointer and an outline of the icon move as you drag; the Trash icon becomes highlighted when the pointer reaches it.

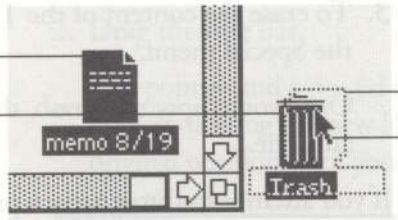


Figure 2-8 Dragging an item to the Trash

2. **When the Trash icon is highlighted, release the mouse button.**

   When you release the button, the Trash icon bulges to show tha something is in the Trash; the icon is no longer highlighted.

Figure 2-9 The Trash icon with something in it

   If you change your mind, simply open the Trash as you would any other icon, and drag the icon you discarded back to its original window.

3. **To erase the content of the Trash, choose Empty Trash from the Special menu.**

   Once you empty the Trash, the discarded icon and its content are gone.

If you attempt to throw away a program or a locked document, yo see a message on the screen. If the item is a program from your disl the message asks you to confirm that you want to throw it away. If the item is a locked document or a program currently in use, the message informs you that you cannot throw it away.

❖ *Another use for the Trash container:* You can eject a floppy disk from a disk drive by dragging the disk icon to the Trash. This action does *not* erase the disk. ❖

➤ *See also:* • "Ejecting a Disk While Using the Desktop" in Chapter 7

Working with windows

You use the standard mouse operations to manipulate windows on the desktop.

Moving a window

You drag a window's *title bar* to move the window.

1. Point to the title bar of the window you want to move.

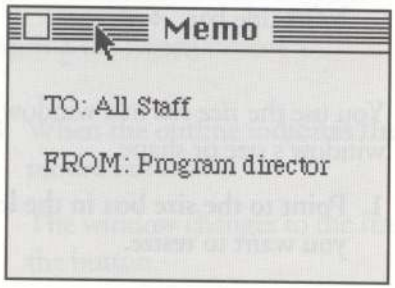


Figure 2-10 The title bar

2. Drag the title bar.

The pointer and a dotted outline of the window move as you drag, indicating the new location. The window remains in its original position until you complete step 3.

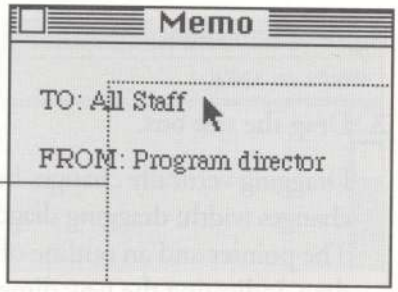


Figure 2-11 Moving a window

3. **When the outline reaches the location you want, release the mouse button.**

   The window moves to the new location when you release the button.

- *Moving inactive windows:* To move an inactive window without making it active, press ⌘ while you drag the window by its title bar.

Resizing a window

You use the *size box* in a window's lower-right corner to change the window's size or shape.

1. **Point to the size box in the lower-right corner of the window you want to resize.**

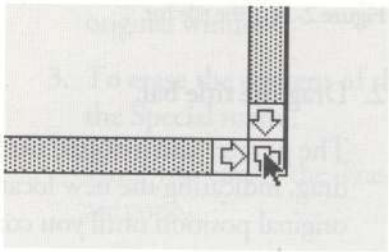


Figure 2-12 The size box

2. **Drag the size box.**

   Dragging vertically changes height; dragging horizontally changes width; dragging diagonally changes both dimensions. The pointer and an outline of the window's borders move as you drag, indicating the new dimensions.

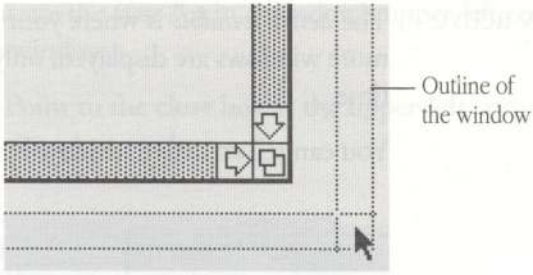


Figure 2-13 Resizing a window

3. **When the outline indicates the size you want, release the mouse button.**

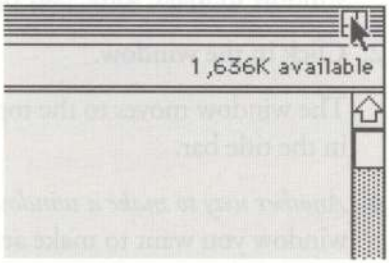
   The window changes to the size of the outline when you release the button.

Enlarging a window to full size

The *zoom box* at the right end of a window's title bar lets you quickly resize the window to its largest size (covering most of the screen).

1. **Point to the zoom box at the upper-right corner of the window you want to enlarge.**

Figure 2-14 The zoom box



2. **Click the zoom box.**

   The window enlarges to full size. You can return the window to its previous dimensions by clicking the zoom box again.

Making a window active

The *active window* is where your actions take place. When two or more windows are displayed, only one of them can be active at a time.

You can tell an active window by the horizontal lines in its title bar.

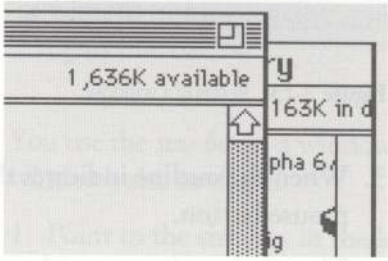


Figure 2-15 Active and inactive windows

Follow these steps to make a window active:

1. **Place the pointer anywhere inside the window you want to make active.**

   Any part of the window will do, even if most of the window is hidden. (You may have to move or resize the currently active window to make some part of the desired window visible.)

2. **Click in the window.**

   The window moves to the top layer on the screen. Lines appear in the title bar.

❖ *Another way to make a window active:* If you can't see the window you want to make active, you can double-click the icon it belongs to. (You may have to resize the currently active window to see the icon.) ❖

Closing a window

You use the *close box* in a window's upper-left corner to close the window.

1. **Point to the close box at the upper-left corner of the window you want to close.**

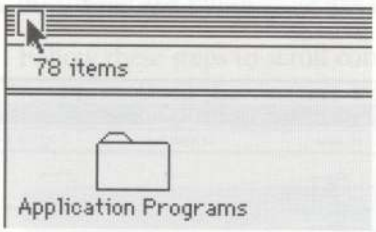


Figure 2-16 The close box

2. **Click the close box.**

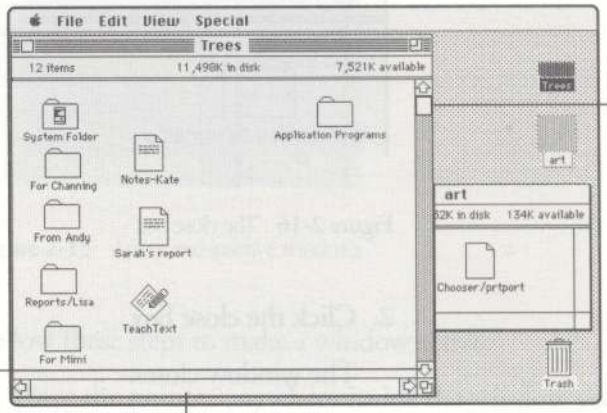
   The window closes.

❖ *Other ways to close windows:* You can use the Close command in the File menu (or its keyboard shortcut, ⌘-W) to close the active window. To close all windows on the desktop, press Option while you choose Close from the File menu or click the close box of the active window. ❖

Viewing the content of a window

Depending on the size of a window and how much it contains, you may not be able to see the entire content at once. You can use a technique called *scrolling* to change the part of a window's content that is visible.

There are three techniques for scrolling; these techniques use the *scroll bars, scroll boxes,* and *scroll arrows* of the window.



Scroll box (shows relative location in window's total content)

Scroll arrow (used to view the content beyond the window's borders)

Every window has two scroll bars, one for vertical scrolling and one for horizontal scrolling. (For both, gray indicates more content beyond window's borders; clear bar indicates all content is visible.)

Figure 2-17 Parts of a window used for scrolling

Scrolling continuously

You can see the complete content of a window by scrolling through it. To scroll continuously, you use the window's scroll arrows.

The up arrow displays content above the window's top border; the down arrow displays content below the window's bottom border. The left and right arrows display content beyond the left and right borders of the window, respectively.

Follow these steps to scroll continuously:

1. **Place the pointer on one of the scroll arrows.**

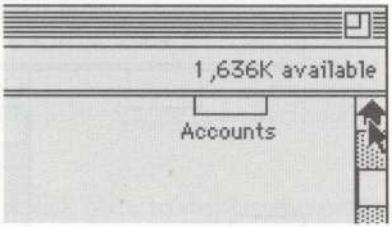


Figure 2-18 Pointing to one of the scroll arrows

2. **Press and hold down the mouse button.**

   Your view of the window's content moves in the direction of the scroll arrow. The scroll box also moves toward the arrow, showing your new position.

3. **When you see the part of the content you want, release the mouse button.**

❖ *Another way to use the scroll arrows:* Simply clicking a scroll arrow changes your view in small increments. ❖

Scrolling to a specific part of a window

You can use the scroll boxes to quickly move your view of a window's content. The position of a scroll box in its scroll bar shows what portion of the window's content you are viewing. For example, moving the scroll box downward in the vertical scroll bar displays what is nearer to the bottom of the window's content.

1. **Drag the scroll box in the direction of the content you want to see.**

   The pointer and an outline of the scroll box move as you drag.

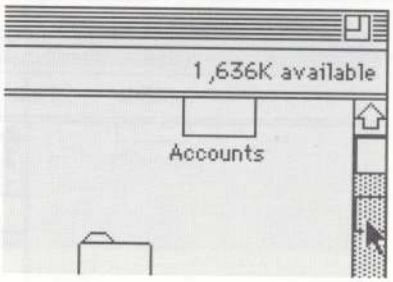


Figure 2-19 Dragging a scroll box

2. **When the scroll box is where you want it, release the mouse button.**

   The scroll box appears in the new position, and your view of the window's content shifts.

Scrolling by the windowful

You can use the scroll bars to shift your view by one windowful at a time.

1. **Place the pointer in the gray area on the side of the scroll box where you want to move your view.**

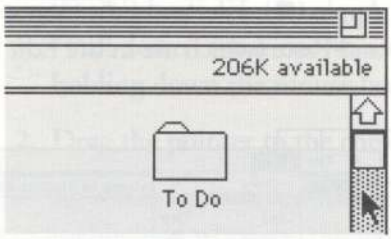


Figure 2-20 Scrolling by the windowful

2. **Click once to display the next windowful of content.**

   When you click, a new windowful of content appears and the scroll box moves to a new position.

❖ *Another way to see more of a window's content:* Resizing the window to larger dimensions, if possible, displays more of its content. ❖

Using menus

Another of the basic Macintosh skills is using menus. Whether you are working on the desktop or in a program, you use menus in a consistent way.

Certain menus, and certain commands within those menus, are the same in all Macintosh software. These core elements include the Apple (), File, and Edit menus and commands such as Cut, Copy, and Paste (which are in the Edit menu).

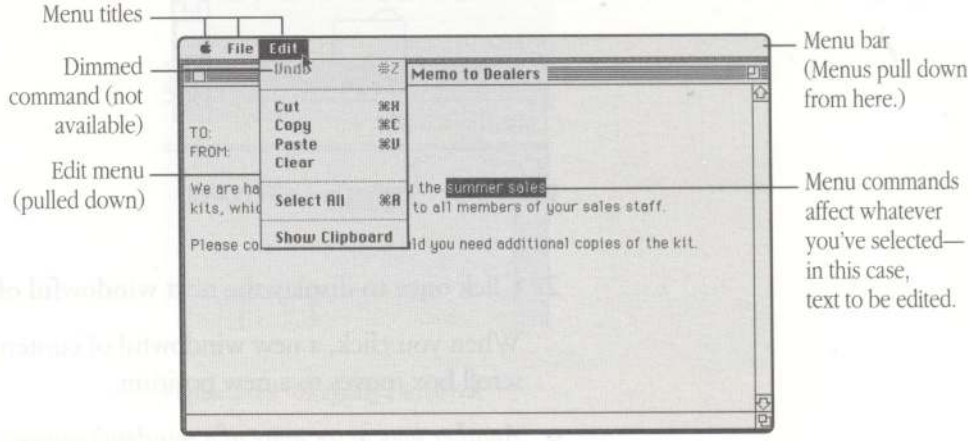


Figure 2-21 The menu bar with the Edit menu pulled down

Pulling down a menu

The principal type of Macintosh menu is called a *pull-down menu* because you use it by "pulling down" from the menu bar.

Follow these steps to display a pull-down menu:

1. **Point to the title of the menu you want in the menu bar at the top of the screen.**

Figure 2-22 Menu titles in the menu bar

2. **Press and hold down the mouse button to display the menu.**

   The menu disappears when you release the mouse button.

Choosing a menu command

You choose a command by displaying a pull-down menu and dragging through it.

1. **"Pull down" the menu you want by pointing to its title and holding down the mouse button.**
2. **Drag the pointer to the command you want.**

   As you drag, each command that is not dimmed becomes highlighted when the pointer is on it. (Dimmed commands are not available and thus cannot be chosen.)

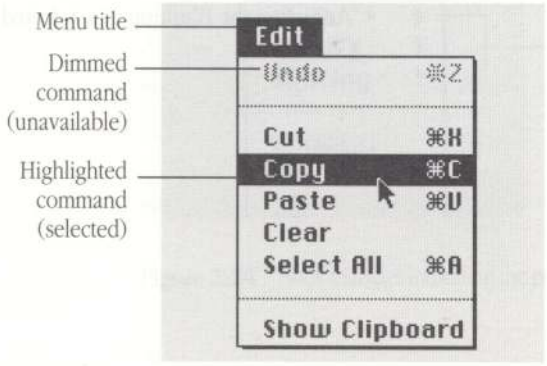


Figure 2-23 Choosing a command from a pull-down menu

3. **Release the mouse button to choose the highlighted command.**

   The command blinks in the menu, then the menu disappears and the command takes effect.

   If you decide not to choose a command, drag the pointer outside the menu before releasing the mouse button.

❖ *Another way to choose a command:* Many commands have a keyboard equivalent that lets you bypass the menu. Such keyboard shortcuts usually involve the Command key (indicated by a ⌘ symbol), which is held down while you press one or more other keys. Each of these keyboard shortcuts is displayed to the right of the command it represents in the menu. ❖

➤ *See also:*
- "Using Special Keys on the Keyboard" in this chapter
- "Adjusting the Blinking of a Selected Menu Item" in Chapter 8

Using a submenu

Some menu commands have *submenus* associated with them. The presence of a submenu is indicated by a small black triangle pointing to the right, next to the command name. The submenu is displayed when you drag over the name of the menu command to which it corresponds.

You use a variation of dragging to choose commands from the submenus.

1. **Pull down the menu that includes the submenu you want.**

   A small triangle at the right of a menu command shows that the command has a submenu.

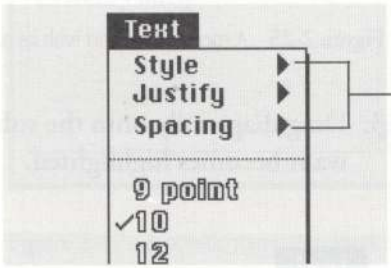


Figure 2-24 Black triangles indicating the presence of submenus

2. **Drag the pointer to the command whose submenu you want to open.**

   When the menu command is highlighted, its submenu opens.

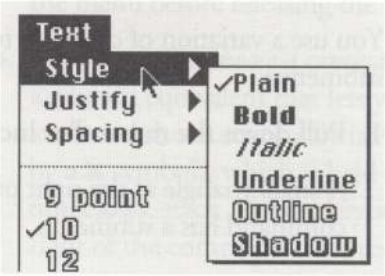


Figure 2-25 A menu command with its submenu displayed

3. **Drag diagonally onto the submenu until the command you want becomes highlighted.**

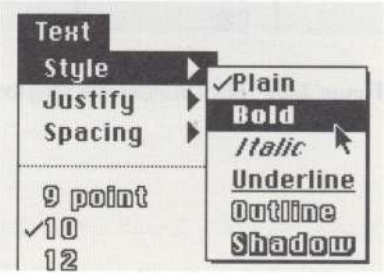


Figure 2-26 Choosing a command from a submenu

4. **Release the mouse button to choose the highlighted submenu command.**

   The command blinks in the submenu, then the submenu and menu close and the command is initiated.

   If you decide not to choose a submenu command, drag the pointer outside the submenu before releasing the mouse button.

Using a pop-up menu

Pop-up menus are similar to pull-down menus, but they don't reside in the menu bar. A common example is the pop-up menu that indicates levels of folders on a disk, in the on-screen box (called a *directory dialog box*) with which you can open and save documents while using an application.

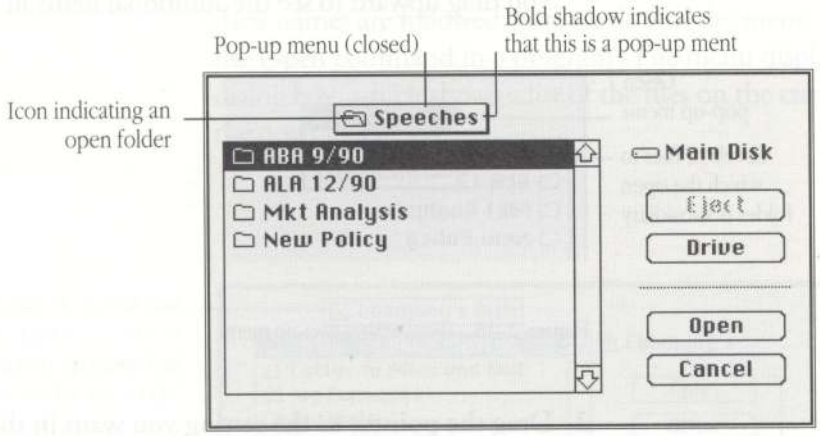


Figure 2-27 A pop-up menu in a directory dialog box

This type of menu is also used in some programs to choose settings or units of measure.

A pop-up menu can extend above or below its title, and some extend in both directions. The setting displayed as the menu title is the setting that is currently in effect.

Follow these steps to use a pop-up menu:

1. **Point to the pop-up menu's title and hold down the mouse button.**

   The menu opens, showing some or all of the items available. (Some pop-up menus extend up as well as down from the title; you drag upward to see the additional items in such menus.)

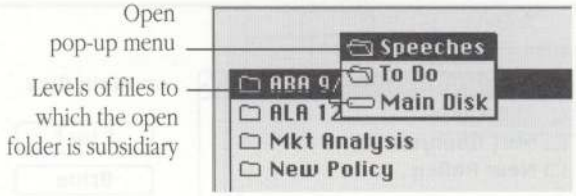


Figure 2-28 Displaying a pop-up menu

2. **Drag the pointer to the setting you want in the pop-up menu.**

   The setting becomes highlighted when the pointer is on it.

3. **Release the mouse button to select the highlighted setting.**

   The pop-up menu closes and the setting selected now appears as the menu title.

   If you decide not to choose a new setting from the pop-up menu, either drag the pointer outside the pop-up menu before releasing the mouse button, or release the mouse button with the current setting still highlighted.

➤ *See also:* • "Moving Quickly Through Levels of Folders When Using a Program" in Chapter 5

Responding to messages on the screen

The Macintosh has several standard ways of displaying messages on the screen. The most common form of message is a *dialog box,* which requires that you choose an option or supply needed information before the Macintosh does what you want it to do.

Some of the most frequently used commands on the Macintosh present dialog boxes. You can readily spot such commands, because their names are followed by three dots in the menu. For example, the Open command in a program's File menu displays a directory dialog box, which shows a list of the files on the current disk or in the open folder.

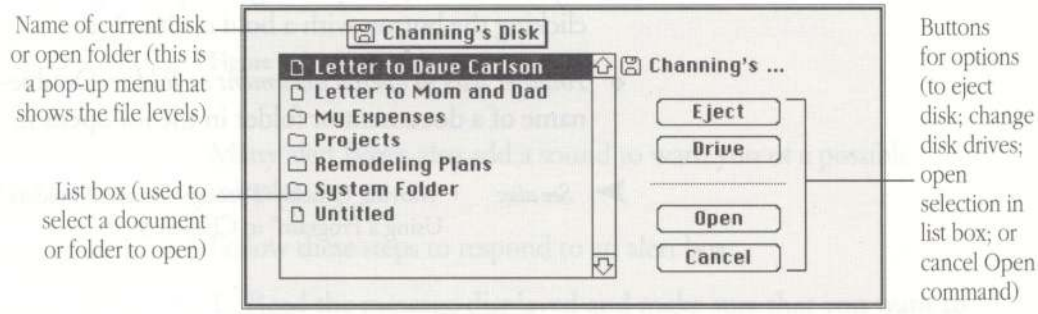


Figure 2-29 A directory dialog box

Using a directory dialog box

You select items and choose options in a directory dialog box with standard operations—scrolling, pointing, and clicking.

This is how you would use the directory dialog box to open the document "Projects" in Figure 2-29:

1. **Click the name "Projects" in the list of documents.**

   When you click a name in the list, the name becomes highlighted.

2. **Click the Open button.**

   The dialog box disappears and the "Projects" document opens.

❖ *Return key shortcut:* You can press Return instead of clicking the Open button. (In any dialog box, pressing Return is the same as clicking the button with a bold outline.) ❖

❖ *Another way to open a document or folder:* Double-clicking the name of a document or folder in the list opens it. ❖

➤ *See also:* • "Moving Quickly Through Levels of Folders When Using a Program" in Chapter 5

Responding to an alert box

Another type of dialog box, the *alert box,* is designed to help you avoid mishaps such as mistakenly losing some of your work or discarding an application program. Its message warns you that you may be doing something you didn't intend and asks you to confirm that you want to go ahead with the action.

For example, if you drag an application program icon to the Trash (thereby discarding it), you see an alert box.

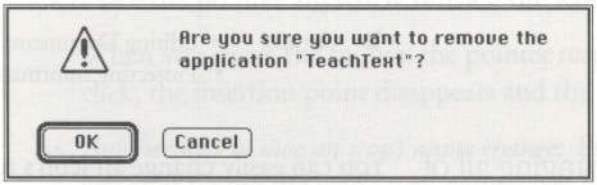


Figure 2-30 An alert box

Many alert boxes also add a sound to warn you of a possible mistake.

Follow these steps to respond to an alert box:

1. **Read the message displayed and make sure that you want to complete the action you initiated.**
2. **Click the OK button to complete the action, or click the Cancel button to cancel the action.**

❖ *Return key shortcut:* You can press Return instead of clicking the OK button. (In any alert box, pressing Return is the same as clicking the button with a bold outline.) ❖

➤ *See also:* • "Setting the Alert Sound" in Chapter 8

Basic editing on the desktop

The Macintosh has a number of built-in editing capabilities, which you can use on the desktop or in application programs. This section introduces some fundamental editing operations that are used for renaming icons on the desktop. These techniques work similarly when used in application programs.

❖ *Certain icons cannot be renamed:* When a file, folder, or disk is locked, its icon cannot be renamed. And you cannot rename the Trash icon or system files on the current startup disk. ❖

➤ *See also:*
- "Editing Documents" in Chapter 4
- "Protecting Information on a Disk" in Chapter 7

Changing all of an icon's name

You can easily change an icon's name.

1. **Click the icon or its name.**

   Selecting the icon also selects its name, and vice versa.

2. **Type a new name for the icon.**

   When you begin typing, the new text appears in place of the old. The *insertion point*—a thin vertical line that marks the place of current activity—blinks at the end of the text you type.

   If you try to type more characters than the maximum allowed (27 for disk names, 31 for file and folder names), you will see an alert box telling you that you cannot exceed the maximum. Click OK (or press Return) to make the alert box disappear.

   If you change your mind about renaming an icon, you can choose Undo from the Edit menu (or press ⌘-Z) to restore the icon's original name.

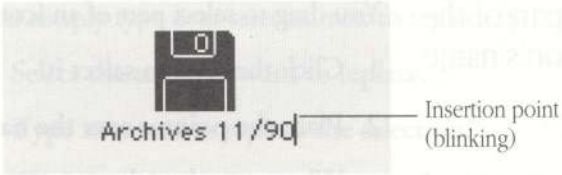


Figure 2-31 The insertion point

3. **Place the pointer anywhere outside the icon and click.**

   When you move the mouse, the pointer reappears. When you click, the insertion point disappears and the icon is deselected.

❖ *Another way to save an icon's name change:* Pressing the Return key after typing the icon's new name saves the change; the icon remains highlighted. ❖

Selecting part of the text in an icon's name

You drag to select part of an icon's name.

1. **Click the icon to select it.**
2. **Place the pointer over the name.**

   When you place the pointer over the text portion of the icon, the arrow changes to an *I-beam*—a vertical symbol that resembles a capital letter 'I'.

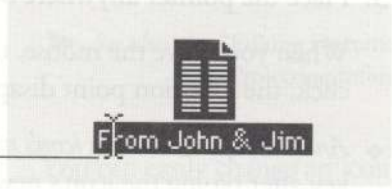


Figure 2-32 An I-beam pointer

3. **Position the I-beam just to the left of the first character in the section you want to select.**
4. **Drag the I-beam over the part of the name you want to select.**
5. **Release the mouse button when the I-beam is just to the right of the last character in the part you want to select.**

❖ *Selecting and deselecting text:* When you are editing text other than icon names, you can extend selected text with the arrow keys in combination with the Shift and Command (⌘) keys. For example, pressing Shift–Right Arrow adds one character to the selection, and pressing Shift–Up Arrow adds one full line above the existing selection. Experiment with different key combinations to find the most useful selecting shortcuts. ❖

Replacing selected text in an icon's name

You simply type over selected text to replace it.

1. **Select the text you want to replace.**
2. **Type new text to replace the selection.**

   The selected text disappears as you begin typing. The insertion point blinks at the end of the new text you type.

3. **Place the pointer anywhere outside the icon and click.**

   When you click, the insertion point disappears and the icon is deselected.

❖ *Another way to save an icon's name change:* Pressing the Return key after typing new text for an icon's name saves the change; the icon remains highlighted. ❖

Deleting selected text from an icon's name

You use the Delete key to remove selected text.

1. **Select the text you want to delete.**
2. **Press the Delete key to delete the selected text.**

   The selected text disappears; the insertion point blinks at the place where text was deleted.

3. **Place the pointer anywhere outside the icon and click.**

   When you click, the insertion point disappears and the icon is deselected.

❖ *Another way to delete text:* You can also use the Cut command or Clear command in the Edit menu to delete selected text. Cut removes text and places it in the computer's memory in an area called the *Clipboard,* from which it can be pasted elsewhere. Clear simply removes the text. ❖

➤ *See also:* • "Deleting Text and Images" in Chapter 4

Inserting text in an icon's name

You can easily insert text in an icon's name without deleting what's already there.

1. **Click the icon to select it.**
2. **Place the I-beam pointer at the spot in the name where you want to insert text, then click.**

   A blinking insertion point appears at the spot where you clicked.
3. **Type the text you want to insert.**

   As you type, the text on either side of the insertion point moves to make room for the new characters.
4. **Place the pointer anywhere outside the icon and click.**

   When you click, the insertion point disappears and the icon is deselected.

Using special keys on the keyboard

The Macintosh Classic keyboard resembles a typewriter keyboard, but some of its keys have special purposes. These special keys and their primary uses are summarized in Figure 2-33.

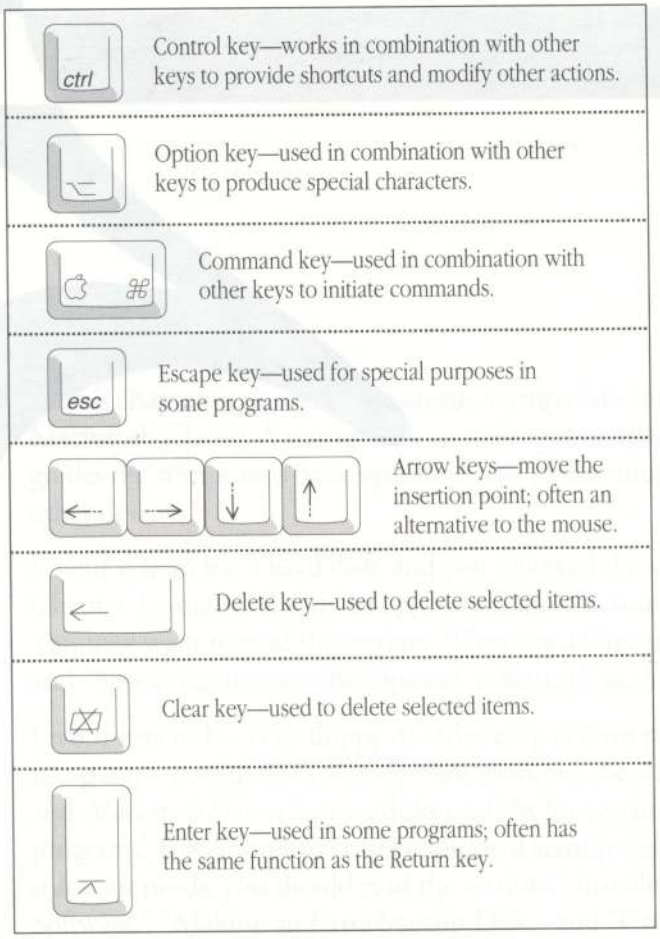


Figure 2-33 Special keys on the Macintosh Classic keyboard

➤ *See also:* • Appendix A, "Macintosh Classic Keyboard and Character Sets"

3

Creating Startup Disks

This chapter explains how to create startup disks for the Macintosh Classic. A startup disk contains *system software,* which guides the computer's basic operation and its communication with other devices.

If your system has a hard disk, and you followed the steps in Chapter 1, you are already using the hard disk as your startup disk. You may want to read the sections "Creating a Customized System" and "Specifying Items to Be Opened at Startup" in this chapter.

If your system has only floppy disk drives, you have probably been using some startup disks already—for example, the *Macintosh Basics* and *Macintosh System Startup* disks or disks for certain application programs. If you want to create additional startup disks to better suit your needs, you should read the sections "Installing System Software," "Making an Extra Startup Disk," and "Creating a Small System" in this chapter.

Preparing your system software

The system software manages Macintosh operations. It transmits information to and from disk drives, printers, and other hardware components, establishes and tracks files, and directs processing inside the computer. Most system software activity is invisible, but *application programs*—the software used for word processing, spreadsheets, and other specialized work—rest on the foundation system software provides.

Installing system software creates a System Folder that contains the *system files* your Macintosh needs. In addition to adding system files, installation adds *drivers* (files that tell the computer how to communicate with peripheral devices) and other resources.

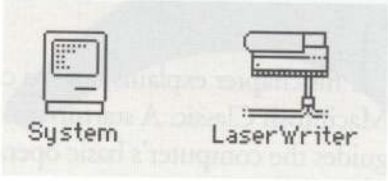


Figure 3-1 Icons for a system file (System) and a driver (LaserWriter)

Checking system software that is already installed

You know that a disk is a startup disk if it has a System Folder on it. If you want to verify that a startup disk contains the system files and drivers you need, you can open the System Folder and examine the contents.

Figure 3-2 shows the contents of a standard System Folder that has been installed on a hard disk for use with the Macintosh Classic.

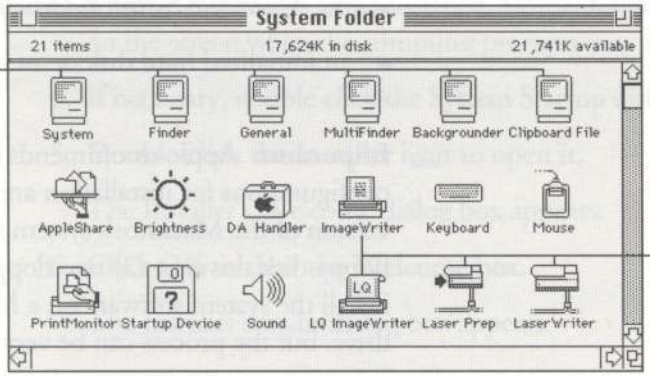


Figure 3-2 A typical System Folder for a startup hard disk

If your System Folder lacks drivers for any of the optional devices you want to use with your Macintosh, you can add the necessary drivers.

Some of these drivers—including the ones for the LaserWriter™ II and ImageWriter™ printers—are added during the regular or custom installation process. You can add other drivers by copying them into the System Folder.

Consult the documentation for your printer, scanner, or other device for information about which driver to install.

Installing system software

You use the Installer program on the *Macintosh System Startup* disk to prepare the system software for the Macintosh Classic, either when you first begin using the computer or when you want to update your system with a new version of system software.

To install the system software, you will need

- the *Macintosh System Startup* disk
- the *Macintosh System Additions* disk
- an initialized hard disk or an initialized floppy disk

△ **Important:** Apple recommends one of two minimum hardware configurations for installation and use of System 6.0 or any later version of the Macintosh system software: (1) a hard disk and one floppy disk drive; or (2) two floppy disk drives. (It is possible to install the system software on a Macintosh with one floppy disk drive, but the process can be very time-consuming.) △

The Installer provides two options—Easy Install and Customize. These instructions cover the Easy Install process, which is suitable for most Macintosh Classic users. (To learn more about the Customize option, see "Creating a Customized System" later in this chapter.)

When you are installing on a floppy disk, the Installer automatically creates a minimum-size system and installs only the ImageWriter printer driver.

You begin the installation procedure with your computer switched off.

1. **Insert the *Macintosh System Startup* disk in the internal floppy disk drive.**
2. **Switch on the computer.**

3. **If you do not have a hard disk, insert an initialized floppy disk in an external floppy drive.**

   If you have only one floppy disk drive (and no hard disk), you will have to eject the *Macintosh System Startup* disk and insert an initialized disk after starting the Installer program. The installation process will involve many disk swaps as you copy the necessary files from the system software disks to the disk on which the system is being installed. Simply follow the instructions on the screen when the computer prompts you to switch disks.

4. **If necessary, double-click the System Startup disk icon to open it.**

5. **Double-click the Installer icon to open it.**

   The Installer's Welcome dialog box appears.

6. **Click OK to clear the Welcome box.**

   The Installer's main dialog box appears.

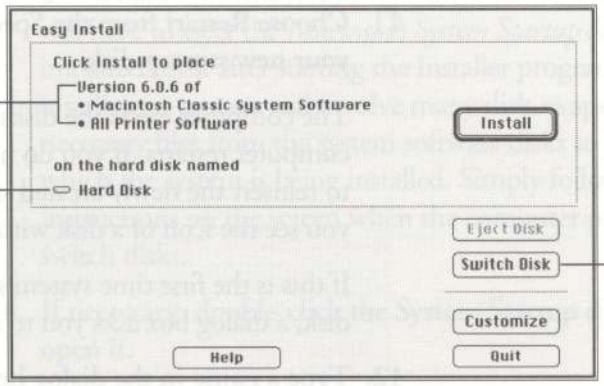


Figure 3-3 The main dialog box of the Installer program

7. **If you want to install system software on a disk other than the one named in the dialog box, click the Switch Disk button until you see the correct name.**

8. **Click Install.**

   The Installer begins to install the system software. Messages on the screen report the progress of the installation and let you know when you need to swap disks.

9. **Whenever the computer prompts you, insert the *Macintosh System Additions* disk.**

   When the computer needs information from the *Macintosh System Additions* disk, it ejects the *Macintosh System Startup* disk and displays a message asking you to insert the other disk.

   If you want to cancel the installation, click the Stop button.

10. **When you see a message reporting that the installation was successful, click Quit.**

    The Installer window closes. (If you see a message saying that the installation was not successful, you will need to begin the process again.)

11. **Choose Restart from the Special menu to begin working with your new startup disk.**

    The computer ejects the disks in the floppy disk drives, and the computer restarts. If you do not have a hard disk, you will need to reinsert the newly created startup disk into a disk drive when you see the icon of a disk with a blinking question mark.

    If this is the first time system software has been installed on the disk, a dialog box asks you to name the Macintosh.

12. **Type a name in the dialog box—your name is fine—and click OK.**

➤ *See also:*
- "Initializing and Naming a Floppy Disk" in Chapter 7
- "Initializing and Naming a Hard Disk for the First Time" in Chapter 7
- "Adding and Removing Fonts and Desk Accessories" in Chapter 8

Creating a customized system

If your Macintosh uses devices whose drivers are not included in the standard software, you can use the customized installation process to create or modify your system.

Customized installation allows you to select the exact combination of system files, drivers, and other kinds of resources you want in your system, and then installs them in your System Folder. You can use this process when you install system software for the first time, when you update to a new version of system software, or when you want to remove unused drivers to save space on your startup disk.

Begin the installation procedure with your Macintosh switched off.

1. **Insert the *Macintosh System Startup* disk in the internal floppy disk drive.**

2. **Switch on the computer.**

3. **If you do not have a hard disk, insert an initialized floppy disk in an external floppy drive.**

   If you have only one floppy disk drive (and no hard disk), you will have to eject the *Macintosh System Startup* disk and insert an initialized disk after starting the Installer program. The installation process will involve many disk swaps as you copy the necessary files from the system software disks to the disk on which the system is being installed. Simply follow the instructions on the screen when the computer prompts you to switch disks.

4. **If necessary, double-click the System Startup disk icon to open it.**

5. **Double-click the Installer icon to open it.**

   The Installer's Welcome dialog box appears.

6. **Click OK to clear the Welcome box.**

   The Installer's main dialog box appears.

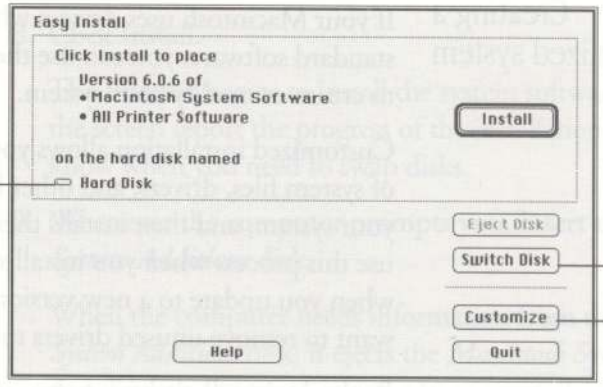


Figure 3-4 The main dialog box of the Installer program

7. **If you want to install system software on a disk other than the one named in the dialog box, click the Switch Disk button until you see the correct name.**
8. **Click Customize.**

   The custom installation screen appears, with a list of all drivers provided with the system software and (farther down in the list) a choice of standard or minimal system files for the Macintosh Classic.

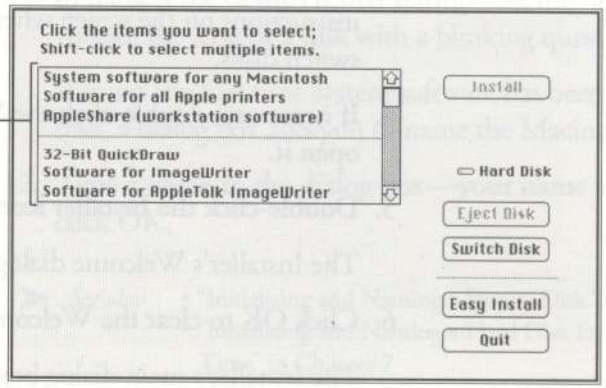


Figure 3-5 The custom installation screen of the Installer program

9. **Scroll through the list of items and Shift-click the ones you want to install.**

   As you select items, their names appear in the lower-left portion of the dialog box. (If you select only one item, details about it appear.)

10. **Click Install.**

    The Installer begins to install the system software. Messages on the screen report the progress of the installation and let you know when you need to swap disks.

11. **If the computer prompts you, insert the *Macintosh System Additions* disk.**

    If the computer needs information from the *Macintosh System Additions* disk, it ejects the *Macintosh System Startup* disk and displays a message asking you to insert the other disk.

    If you want to cancel the installation, click the Stop button.

12. **When you see a message reporting that the installation was successful, click Quit.**

    The Installer window closes. (If you see a message saying that the installation was not successful, you will need to begin the process again.)

13. **Choose Restart from the Special menu to begin working with your new startup disk.**

    The computer ejects the disks in the floppy disk drives, and the computer restarts. If you do not have a hard disk, you will need to reinsert the newly created startup disk into a disk drive when you see the icon of a disk with a blinking question mark.

    If this is the first time system software has been installed on the disk, a dialog box asks you to name the Macintosh.

14. **Type a name in the dialog box—your name is fine—and click OK.**

You can make sure that the correct items were installed by opening the startup disk's icon, then opening the System Folder and reviewing its contents.

➤ *See also:*
- "Creating a Small System" in this chapter
- "Adding and Removing Fonts and Desk Accessories" in Chapter 8

Making an extra startup disk

Your Macintosh requires a startup disk—that is, a disk with a System Folder installed on it—whenever you switch on or restart the computer.

If your Macintosh has a hard disk that has system software installed on it, you already have your startup disk and do not need to create any floppy disks to use as startup disks.

If your Macintosh has only floppy disk drives, you may want to create several startup disks to use with different application programs for convenience. (Not all application program disks are startup disks. Even when a program disk is a startup disk, you may prefer to start up from your own customized startup disk—for example, if you want access to more fonts and desk accessories than would fit on the same disk with the program.)

Once you have installed the system software on one floppy disk, you can simply copy its System Folder to one or more initialized floppy disks to make duplicate startup disks.

To make an extra startup disk you need

- a disk with your installed system software
- an initialized floppy disk

Follow these steps to make an extra startup disk:

1. **Insert the disk that contains your installed system software.**
2. **Open the icon of the disk that contains your installed system software.**
3. **Insert the initialized disk in a floppy disk drive.**

   If you have only one floppy disk drive, eject the disk containing the installed system software and then insert an initialized disk. This disk will become your new startup disk.
4. **Drag the System Folder to the icon of the startup disk you want to create.**

   The System Folder is copied onto the new startup disk.

   If you have only one floppy disk drive, this process will require a number of disk swaps.

   If there is not enough room on the initialized disk, you will see a message indicating how much more room you need. Click OK, then either create space on the disk by deleting unwanted files, or use a different disk.

➤ *See also:* • "Initializing and Naming a Floppy Disk" in Chapter 7

Creating a small system

When you install the system software on a floppy disk, the Installer automatically creates the smallest practical System Folder. (For example, it installs only a few fonts and desk accessories.) This allows the maximum room on your startup disks for application programs and your own work.

You can also create this small system by selecting the "Minimal software for Macintosh Classic" option from the Customize dialog box of the Installer.

If you did not originally install a small system, or if you have added drivers, fonts, or desk accessories since installation, you can remove items that are not essential. You remove drivers by dragging them out of the System Folder and onto a backup disk (or to the Trash, if you are certain you will not need them again). You remove fonts and desk accessories with the Font/DA Mover. (Again, you may want to save a copy of each removed item on another disk.)

Depending on the devices connected to your Macintosh, and on how much room you need on your startup disk, you should consider removing these items:

- drivers for printers or other devices you do not use (such as ImageWriter, AppleTalk™ ImageWriter, LaserWriter, and Laser Prep)
- networking drivers (such as AppleShare™), if you are not on a network
- extra desk accessories (you will definitely need the Control Panel, but you may not need the Alarm Clock, the Calculator, the Chooser, Find File, Key Caps, or the Scrapbook)
- extra fonts you have installed

➤ *See also:*
- "Creating a Customized System" in this chapter
- "Making an Extra Startup Disk" (previous section)
- "Adding and Removing Fonts and Desk Accessories" in Chapter 8

Updating to a new version of system software

If you have been using an older version of the system software and you get a newer version, you can update your system by installing the newer software. Doing so replaces old system files, drivers, and other resources with new versions, but it does not disturb any customized features (such as fonts and desk accessories) you may have added.

When updating to a new version of system software, it is a good idea to install the new version on all your startup disks. (But you may want to keep a backup copy of the old version, because existing application programs sometimes have problems running with new versions of system software.)

To install new system software, follow the instructions in "Installing System Software" or "Creating a Customized System" earlier in this chapter.

Specifying items to be opened at startup

You can designate one or more application programs, desk accessories, or documents to be opened automatically when you start up the Macintosh.

To specify items for opening at startup, you use the dialog box that appears when you choose the Set Startup command from the Special menu.

The procedure for using the Set Startup command varies somewhat according to the number and type of items you want to open at startup.

Table 3-1, at the end of this chapter, summarizes the procedures for opening programs, documents, and desk accessories at startup.

Selecting one startup program or document

Whether you use only the Finder™ (the system file that manages the desktop, windows, and icons) or MultiFinder™ (the system file that permits the Macintosh to work with the Finder and other programs simultaneously), you can easily specify a program or document for opening at startup.

1. **Click the icon of the program or document you want opened at startup.**
2. **Choose Set Startup from the Special menu.**

   The Set Startup dialog box appears.

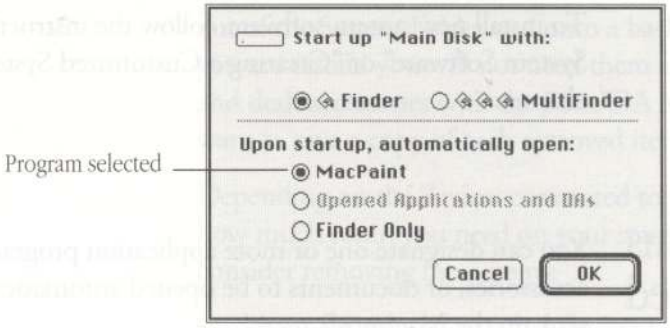


Figure 3-6 The Set Startup dialog box with one item selected

3. **Make sure that the name of the program or document you selected is shown.**
4. **Click OK.**

   Changing from Finder to MultiFinder or vice versa will not affect your selection of a startup program or document.
5. **Choose Restart from the Special menu.**

   The program or document you selected is opened when the Macintosh restarts.

Your startup selection remains in effect until you change it with the Set Startup command.

Selecting multiple startup items

To open more than one item at startup, you must use MultiFinder. You use the Set Startup command to turn on MultiFinder, as well as to specify the startup items. Until you turn MultiFinder on, the Macintosh automatically uses the Finder.

The instructions that follow show how to select a group of items for opening at startup. Consult Table 3-1 for a summary of the procedures required to select several different types and combinations of startup items.

1. **Select the programs and documents you want to have opened by Shift-clicking their icons.**

   All the items must reside on the startup disk, either all in the same folder or all at the disk's main directory level.

   If you want to specify desk accessories as startup items, you must first turn on MultiFinder and then open the desk accessories.

2. **Choose Set Startup from the Special menu.**

   The Set Startup dialog box appears.

With MultiFinder turned on, the Selected Items option is automatically selected.

Figure 3-7 The Set Startup dialog box with multiple items selected

3. **If necessary, click the MultiFinder button to turn it on.**

   Skip this step if MultiFinder is already selected.

4. **If the Selected Items button is not selected, click to select it.**

5. **Click OK.**

6. **Choose Restart from the Special menu.**

   The items you selected are opened when the Macintosh restarts.

Your startup selection remains in effect until you change it with the Set Startup command.

➤ *See also:*
- "Managing Multiple Programs Using MultiFinder" in Chapter 4
- "Managing System Memory" in Chapter 4

Table 3-1 Summary of procedures for opening items at startup

To open at startup	Requires	Do before choosing Set Startup
1 application program	Finder or MultiFinder	Select program icon
2 or more programs	MultiFinder	Open programs (or select program icons)
1 or more desk accessories	MultiFinder turned on*	Open desk accessories
1 or more desk accessories plus 1 or more programs	MultiFinder turned on*	Open desk accessories and programs (or select program icons)
1 or more documents	MultiFinder	Select document icons
1 or more documents plus 1 or more application programs	MultiFinder	Select document icons and program icons (or open programs)
1 or more documents plus 1 or more desk accessories	Not possible	

*MultiFinder must already be in effect before you open any desk accessories to specify them as startup items.

4

Working With Application Programs

Application programs determine what kinds of work you can do with your Macintosh Classic—for example, writing, drawing, designing, calculating, or managing information. Each piece of work you create with an application program—each letter, drawing, spreadsheet, and so on—is called a *document.*

This chapter outlines some fundamental operations common to all application programs, regardless of the type of work they do. These operations include

- installing and starting the application program
- moving and copying text and images, either within a document or between documents
- saving and naming documents
- storing frequently used text and images for easy access
- ending a work session

This chapter also explains how to manage several programs at once, how to navigate your way among open programs and windows, and how to adjust the way your computer uses random-access memory (RAM) for increased efficiency.

Preparing to use a program

You use standard Macintosh operations to install and start most programs, and to create documents with them. Once you have created a document with a program, you can either start the program and then open the document, or simply open the document's icon on the desktop, which automatically starts the program. (The program must be on your hard disk or in a disk in one of your floppy disk drives.)

➤ *See also:* • Chapter 2, "Basic Macintosh Operations"

Installing a program

In most cases, you install a program by copying it from its original disk to your hard disk or to a floppy disk. A few programs have more elaborate installations, which are described in their documentation.

Follow these steps to install a typical program:

1. **Insert a copy of the program disk in a floppy disk drive.**
2. **Open the program disk's icon by double-clicking it.**
3. **Copy the program by dragging its icon to the icon of your hard disk or a floppy disk.**

   Release the mouse button when the disk's icon becomes highlighted. The program is then copied onto the disk. (You can also copy a program to a folder or an open directory window by dragging its icon there.)

   If your system has only one floppy disk drive, you will have to swap disks several times. Watch for instructions on the screen telling you when to swap disks.

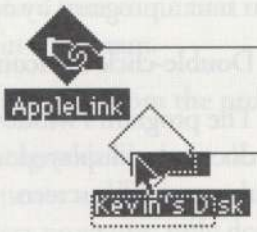


Figure 4-1 Copying a program onto another disk

4. **If necessary, copy any additional files the program needs by dragging their icons to the hard disk or the floppy disk.**

   The program's documentation should specify whether any such files are needed.

It is a good idea to open the icon of the hard disk or the floppy disk to make sure that the program and other files were copied.

Consult the program's documentation to determine whether additional installation steps are necessary.

➤ *See also:*
- "Installing System Software" in Chapter 3
- "Creating a Small System" in Chapter 3
- "Making an Extra Startup Disk" in Chapter 3
- "Backing Up a Floppy Disk" in Chapter 7

Starting a program

You start a program by opening it, a one-step procedure.

1. **Double-click the icon of the program you want to start.**

   The program's window appears, usually with a new, blank document displayed, and the program's menu bar appears at the top of the screen.

❖ *Other ways to open programs:* You can also open a program by selecting its icon and choosing the Open command from the File menu, or by double-clicking the icon of a document created by the program. ❖

The program remains open until you quit, usually by choosing Quit from the File menu (or by using the keyboard shortcut ⌘-Q provided in many programs).

➤ *See also:*
- "Opening an Existing Document While Working on the Desktop" in this chapter
- "Knowing Where You Are on the Macintosh" in this chapter

Creating a new document in a program

You create a new document while working in a program by choosing the New command, a one-step procedure.

1. **Choose New from the program's File menu.**

   The program opens a new document. If another document was already open, the new one covers it. (Some programs cannot have more than one document open at a time.)

Opening an existing document while working in a program

You use the Open command to open an existing document while working in a program.

1. **Choose Open from the program's File menu.**

   The program's directory dialog box appears, with a list of documents and folders on the current disk or in the open folder. (In most programs, only documents that can be opened by the program appear in this list. When you are using a word-processing program, for example, you do not see the names of documents created by a graphics program.)

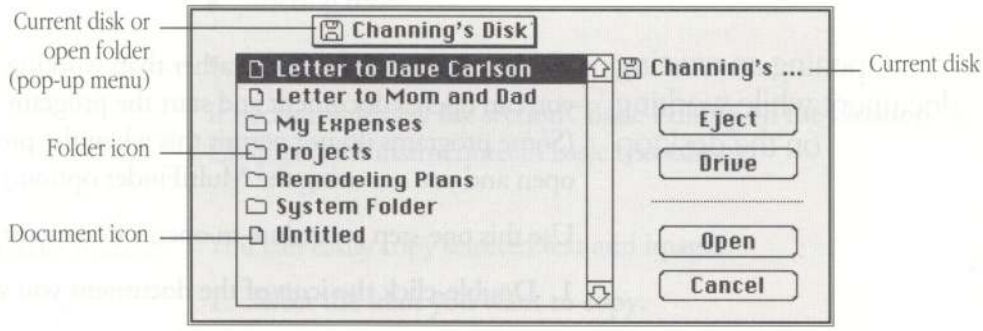


Figure 4-2 The directory dialog box for opening documents

2. **If the document you want to open is on another disk, click the Drive button until you see the directory for the appropriate disk.**

   If the disk name does not appear, check to make sure that the desired disk has been inserted in a disk drive.

3. **If necessary, scroll to locate the document.**

4. **Click the document's name to select it.**

If necessary, you can display the documents in a folder by selecting the folder and clicking the Open button.

If the document is at a higher level, you can use the pop-up menu to display it.

5. **Click the Open button to open the selected document.**

➤ *See also:*
- "Using a Pop-Up Menu" in Chapter 2
- "Moving Quickly Through Levels of Folders When Using a Program" in Chapter 5

Opening an existing document while working on the desktop

If you are using the desktop rather than working in a program, you can open a document and start the program at the same time. (Some programs do not permit this when the program is already open and you are using the MultiFinder option.)

Use this one-step procedure to open a document from the desktop:

1. **Double-click the icon of the document you want to open.**

The program starts, with the document open in its window.

When you close the document, the program stays open until you quit, usually by choosing Quit from the File menu (or by using the keyboard shortcut ⌘-Q).

➤ *See also:*
- "Knowing Where You Are on the Macintosh" in this chapter
- "Managing Multiple Programs Using MultiFinder" in this chapter

Editing documents

The Macintosh computer's built-in editing capabilities allow you to edit text and to copy both text and images between parts of a document, from one document to another within a program, and between documents in different programs.

Editing text

You can use the basic text-editing techniques when you are working with text in a program. These techniques include

- selecting text
- replacing text
- deleting text
- inserting text

If necessary, review the section "Basic Editing on the Desktop" in Chapter 2 for instructions in basic text editing.

Copying text and images

You can easily copy selected text and images.

1. **Select the item you want to copy.**

   In a graphics program, the boundaries of a selection are often displayed as a moving dashed outline; in a text program, a selection is highlighted.

2. **Choose Copy from the program's Edit menu.**

   Your selection is copied and stored in the part of the computer's memory called the *Clipboard*. It remains there until you copy or cut another item, or until you switch off or restart the computer.

❖ *Copying shortcut:* You can also use the keyboard shortcut ⌘-C to copy selected items. ❖

❖ *To check the Clipboard:* You can see the current contents of the Clipboard by choosing the Show Clipboard command from the Edit menu. This command is available in some programs, and it is always available when you are working on the desktop. ❖

➤ *See also:* • "Deleting Text and Images" in this chapter

Inserting copied text and images within a document

Once you have copied text or images, you can insert that material anywhere in an open document.

1. **Click at the exact spot where you want the item to appear.**

   A blinking insertion point appears at the spot where you clicked.

2. **Choose Paste from the program's Edit menu.**

   The item you copied appears at the insertion point.

   You can paste the copied item as many times as you wish.

❖ *Pasting shortcut:* You can also use the keyboard shortcut ⌘-V to paste copied material into a document. ❖

Copying text and images between documents in different programs

You can easily copy text and images from a document in one program to a document in another program.

1. **Select the desired material from a document in the first program.**

   In a graphics program, the boundaries of a selection are often displayed as a moving dashed outline; in a text program, a selection is highlighted.

2. **Choose Copy from the Edit menu (or press ⌘-C).**

   The selection is copied to the Clipboard.

3. **Choose Quit from the File menu (or press ⌘-Q) to leave the first program.**

   If you are using MultiFinder, you do not have to quit the first program; you can simply switch to the desktop—or to the second program, if it is already open.

4. **Double-click the icon of the document into which you want to paste the copied item.**

   Opening the document starts the program automatically.

5. **Click at the exact spot where you want the item to appear in the document just opened.**

   A blinking insertion point appears at the spot where you clicked.

6. **Choose Paste from the Edit menu (or press ⌘-V).**

   The item you copied appears at the insertion point.

   You can paste the copied item as many times as you wish.

➤ *See also:*
- "Switching Programs or Desk Accessories With MultiFinder" in this chapter
- "Starting a New Program When Using MultiFinder" in this chapter

Deleting text and images

You can delete text and images from a document in either of two ways.

One method, using the Cut command, places the deleted material in the area of the computer's memory called the Clipboard so that you can get it back. It remains there until you copy or cut another item, or until you switch off or restart the computer.

The second method, using the Clear command, removes the material and does not place it on the Clipboard. Cleared material is gone—you cannot get it back.

Follow these steps to cut or clear something:

1. **Select the item to be removed.**

   In a graphics program, the boundaries of a selection are often displayed as a moving dashed outline; in a text program, a selection is highlighted.

2. **Choose Cut or Clear from the program's Edit menu.**

   The selected item disappears from the screen.

❖ *Another way to cut text and images:* You can also use the keyboard shortcut ⌘-X to cut material and place a copy on the Clipboard. ❖

❖ *Another way to clear text and images:* Pressing the Delete key also clears selected material. ❖

Undoing an editing action

You can undo many actions with the Undo command, which reverses your most recent action (if it is possible to reverse that action).

The actions you can undo with this command vary from program to program.

Follow these steps to undo an action:

1. **Open the program's Edit menu to see if the Undo command is available.**

   The command is black if available; it is dimmed and sometimes reads "Can't undo" if it cannot be used to reverse your most recent action.

2. **If Undo is available, choose it from the Edit menu.**

   The Undo command reverses your previous action. Choosing Undo a second time restores your original action. (In some programs, the command name changes to Redo when it will have this effect.)

❖ *Shortcut for Undo:* You can use the keyboard shortcut ⌘-Z to initiate the Undo command. ❖

Saving documents

Saving your work often is the best safeguard against lost data. Macintosh programs offer several ways to save documents, providing great flexibility in managing and storing your work.

When you save, you can

- name the document
- save revisions under a new name or in a new location
- save revisions with no change in name or location
- save all or part of a document in the Scrapbook desk accessory, for access any time

Some programs also give you the option of saving documents in a different format—for example, a format that can be recognized by other types of computers. For more information, refer to your software manuals.

Most saving options use a form of the directory dialog box, in which you name a document and select its storage location.

Saving a new document on the current disk

When you create a new document and save it for the first time, you must name it.

When a document has not yet been named, a directory dialog box automatically appears when you choose the Save command. The same dialog box also appears when you choose the Save As command (another command in a program's File menu) or when you try to close a file or quit a program without having saved a new document.

Follow these steps to save and name a document:

1. **Choose Save from the program's File menu.**

   The directory dialog box appears, with a blinking insertion point in the name box.

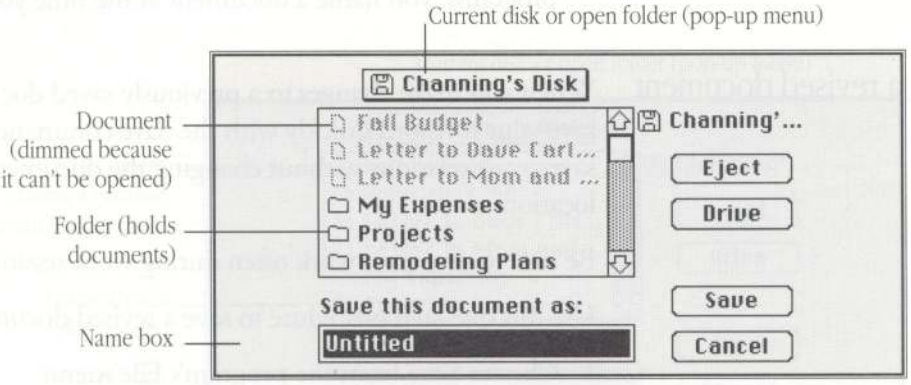


Figure 4-3 The directory dialog box for saving files

2. **Type a name for the document.**

   If you make a typing error, you can use the Delete key to erase backward, or you can drag across the part of the name to be corrected, and then retype.

3. **Click the Save button.**

   The program saves the document, and the dialog box disappears. The name of the document now appears in the window's title bar.

   The pointer becomes a wristwatch while the document is being saved. (Some programs use a different icon.)

- *Saving shortcut:* You can save revisions quickly by using the keyboard shortcut ⌘-S, which is available in many programs.
- *A different way to save:* Some programs, such as HyperCard and other database software, save your document automatically after you make a change and when you close the document. In these programs, you name a document at the time you open it.

Saving a revised document

When you make changes to a previously saved document, you can save your revisions quickly with the Save command. This command saves your revisions without changing the document's name or location.

Be sure to save your work often during work sessions.

Use this one-step procedure to save a revised document:

1. **Choose Save from the program's File menu.**

   The pointer becomes a wristwatch while the document is being saved. (Some programs use a different icon.)

- *Saving shortcut:* You can save revisions quickly by using the keyboard shortcut ⌘-S, which is available in many programs.

Saving a document under a new name

You can change the name of an existing document with the Save As command.

1. **Choose Save As from the program's File menu.**

   A directory dialog box appears, with the document's current name selected in the name box.

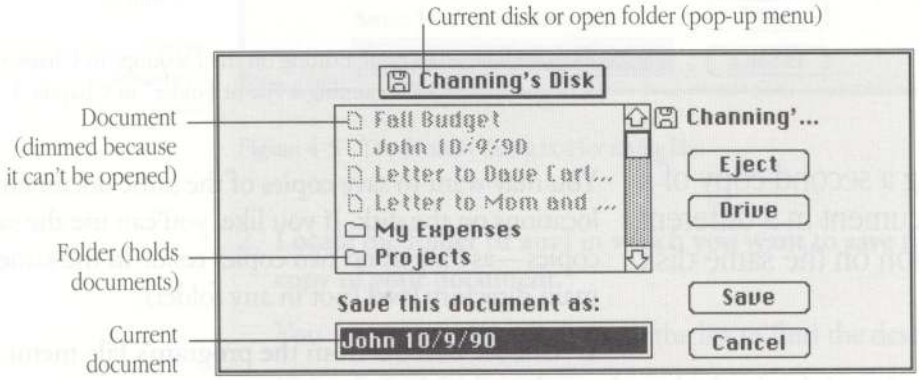


Figure 4-4 The directory dialog box for saving files

2. **Type a new name for the document.**

   Your typing replaces the selected name. If you make a typing error, you can use the Delete key to erase backward, or you can drag across the part of the name to be corrected, and then retype.

3. **Click the Save button to save the document under its new name.**

   The document is saved and the dialog box disappears. The new document's name appears in the window's title bar.

❖ *Return key shortcut:* You can press Return instead of clicking the Save button. ❖

When you save with a new name, the original document (with its original name) remains intact, in the version you last saved before changing the name. To avoid confusion with different versions of a document, it is a good idea to include a number, date, or other identifying element whenever you change a document's name.

To rename a document without retaining a version under the old name, change its name on the desktop.

➤ *See also:* • "Basic Editing on the Desktop" in Chapter 2
• "Renaming a File or Folder" in Chapter 5

Saving a second copy of a document in a different location on the same disk

You may want to save copies of the same document in different locations on the disk. If you like, you can use the same name for all copies—as long as no two copies reside in the same folder or at the main directory level (not in any folder).

1. **Choose Save As from the program's File menu.**

   The directory dialog box appears, with the document's current name selected.

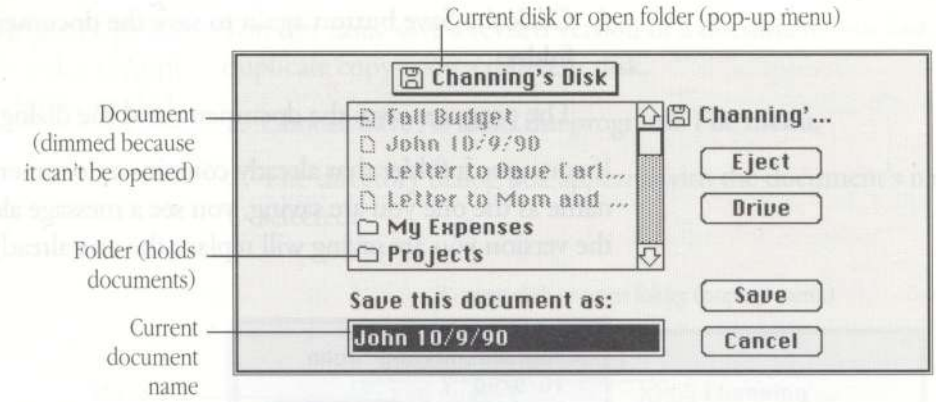


Figure 4-5 The directory dialog box for saving files

2. **Locate the folder (if any) in which you want to save the second copy of your document.**

   You may need to scroll through the list to find the desired folder.

   If the desired folder is located at a higher level than the list currently displayed (that is, if it is nested in fewer folders), use the pop-up menu above the list box to move to the appropriate level.

3. **Click the folder's name, and then click the Save button to open the folder.**

   The folder opens, and a list of the folder's contents is displayed.

   If the folder you want is nested within other folders, you will need to repeat this step until the list of the desired folder's contents is displayed in the dialog box.

❖ *Shortcut for opening folders:* You can double-click a folder in the directory dialog box to open it. ❖

4. **Click the Save button again to save the document in the open folder.**

   The program saves the document, and the dialog box disappears.

If you open a folder that already contains a document with the same name as the one you are saving, you see a message alerting you that the version you are saving will replace the one already there.

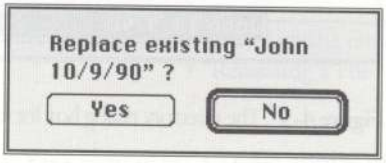


Figure 4-6 Alert box to confirm replacing old version with new

You can avoid replacing the old version by clicking the No button. Clicking Yes replaces the old version with the new one.

➤ *See also:*
- "Using a Pop-Up Menu" in Chapter 2
- "Copying a File or Folder on the Same Disk" in Chapter 5
- "Using Folders to Organize Your Work" in Chapter 5
- "Moving Quickly Through Levels of Folders When Using a Program" in Chapter 5

Saving a copy of a document onto a different disk

You can easily save a revised version of a document—or just a duplicate copy—on a different disk.

1. **Choose Save As from the program's File menu.**

   The directory dialog box appears, with the document's name selected.

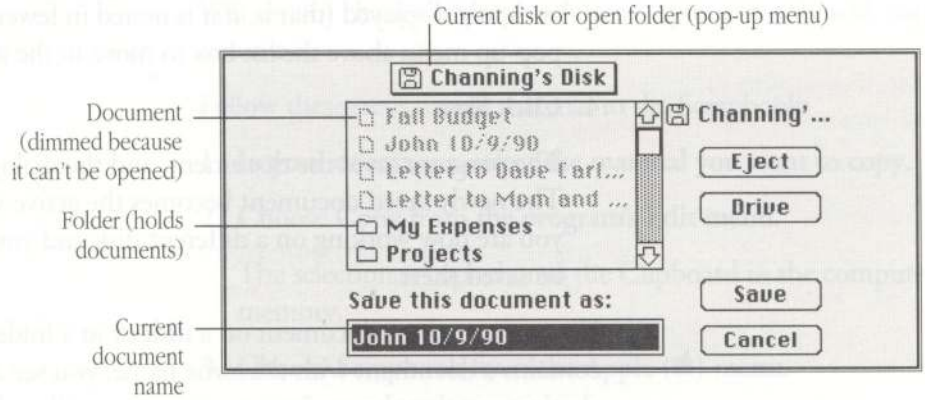


Figure 4-7 The directory dialog box for saving files

2. **Click the Drive button to display the name of a different disk.**

   If you are using floppy disks, you may have to eject a disk—using the Eject button in the dialog box—and then insert the desired disk.

3. **If necessary, select a different location on the new disk.**

   If you want to save the document in a folder, double-click the folder to display its directory. (If the desired folder is nested within other folders, you will need to repeat this step until the desired folder's directory is displayed.)

   If the folder you want is located at a higher level than the list currently displayed (that is, if it is nested in fewer folders), use the pop-up menu above the list box to move to the appropriate level.

4. **Click Save.**

   The program saves the document, and the dialog box disappears. The newly saved document becomes the active version—that is, you are now working on a different disk and your changes will be saved there.

If you try to save a document on a disk or in a folder that already contains a document with the same name, you see a message alerting you that the version you are saving will replace the one already there.

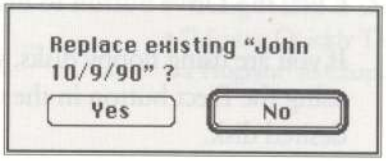


Figure 4-8 Alert box to confirm replacing old version with new

You can avoid replacing the old version by clicking No. Clicking Yes replaces the old version with the new one.

➤ *See also:*
- "Using a Pop-Up Menu" in Chapter 2
- "Copying a File or Folder Onto Another Disk" in Chapter 5
- "Using Folders to Organize Your Work" in Chapter 5
- "Moving Quickly Through Levels of Folders When Using a Program" in Chapter 5

Saving text and images in the Scrapbook for easy access

The Scrapbook desk accessory provides an excellent storage place for text and images you use frequently. The Scrapbook is installed automatically with the system software, and you can use it to store as many items as your startup disk has room for.

When the Scrapbook is open, you use the standard Cut, Copy, and Clear commands to operate on the content of its window.

You cannot change a Scrapbook item—you can only add, copy or remove it.

Follow these steps to add material to the Scrapbook:

1. **In your document, select the material you want to copy.**
2. **Choose Copy from the program's Edit menu.**

   The selection is copied onto the Clipboard in the computer's memory.
3. **Choose Scrapbook from the Apple (🍎) menu.**

   The Scrapbook desk accessory appears, displaying the first item in it. (Several sample items are supplied for you.)

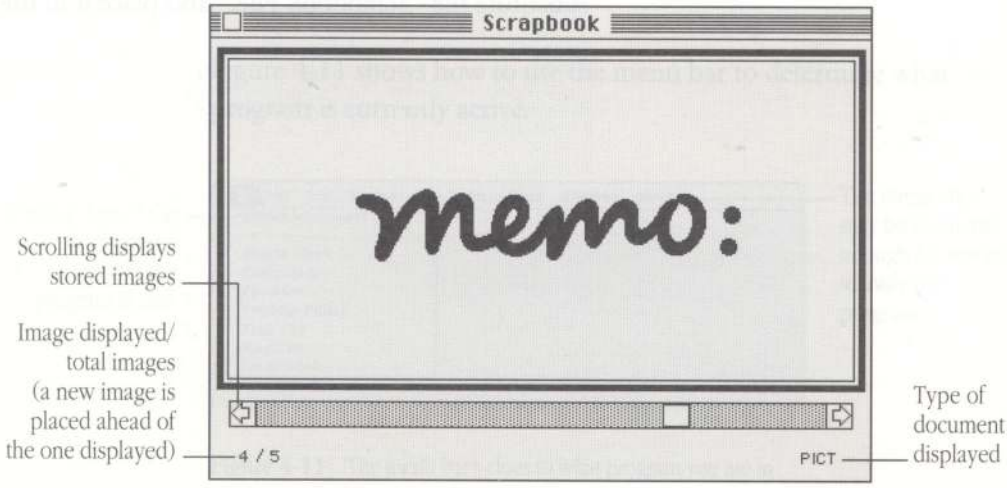


Figure 4-9 An item in the Scrapbook

4. **Choose Paste from the Edit menu.**

   The selection is pasted before the item that was displayed, and the number of items is adjusted to reflect the addition.

5. **Click the Scrapbook's close box.**

You can perform these editing operations in the Scrapbook:

- Cut—delete the item displayed and store it on the Clipboard (see "Copying Text and Images" earlier in this chapter)
- Copy—copy the item displayed and store it on the Clipboard (for pasting into the desired document)
- Clear—delete the item displayed

You can create more than one version of the Scrapbook, but the system can work with only one such file at a time. If you maintain several scrapbook files, be sure to store them under different names so that you do not inadvertently replace one of them with the content of another.

To swap Scrapbook files, remove the current Scrapbook File from the System Folder and give it a different name. Then rename the substitute file "Scrapbook File," and place it in the System Folder.

Knowing where you are on the Macintosh

One feature that makes the Macintosh easy to use is that different programs all present a similar "environment" on the screen. While this is reassuring to a new user, it can also be confusing. At times you may look at the screen and wonder which program you are in—or even whether you are in a program or on the desktop.

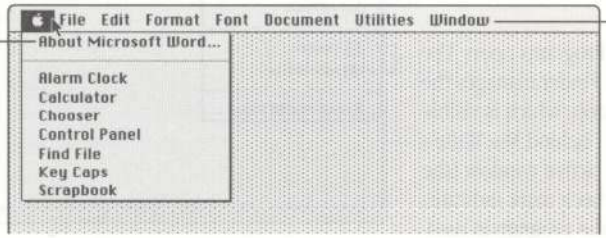
If you use MultiFinder, determining where you are from what you are seeing can be especially tricky, because you can see parts of the desktop even when you are using a program.

But the Macintosh has some built-in clues to help you determine your whereabouts. The figures that follow show some easy ways to get your bearings.

Figure 4-10 shows the menu bar of an otherwise blank screen that you might see during a work session.

Figure 4-10 A blank screen with only the menu bar showing

Figure 4-11 shows how to use the menu bar to determine what program is currently active.



The top line of the Apple menu names the program in use.

The menu titles may be distinctive enough for you to identify the program.

Figure 4-11 The menu bar's clues to what program you are in

Figure 4-12 shows the way the screen might look during a typical work session when you are using MultiFinder.

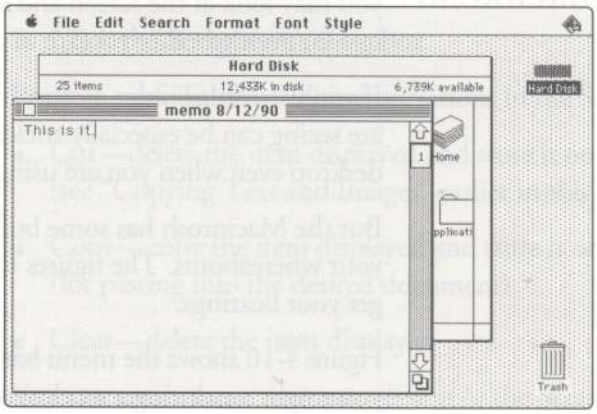
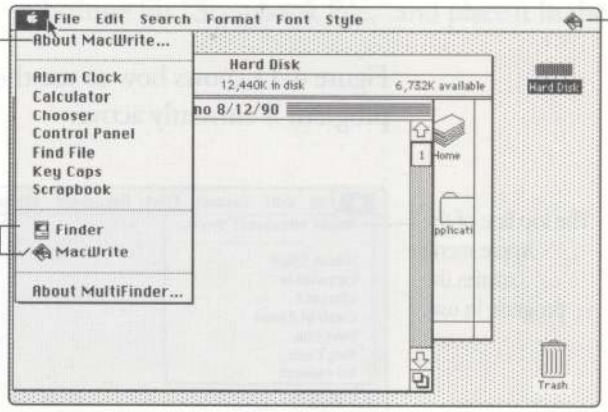


Figure 4-12 Screen with program and desktop windows open

Figure 4-13 shows how to find out what program you are in and what other programs are open when you are using MultiFinder.



Program in use

Programs open: The Finder manages the desktop, which is visible behind MacWrite's active window (the check mark indicates the program in use).

A small icon in this location indicates that MultiFinder is turned on; this particular icon represents MacWrite, the current program.

Figure 4-13 Clues about open and active programs when using MultiFinder

➤ *See also:* • "Managing Multiple Programs Using MultiFinder" in this chapter

Returning to the desktop from a program

To return to the desktop when you are using a program (and MultiFinder is not turned on), save your work and quit the program.

1. **For each open document, choose Save from the File menu.**

   Most programs warn you if you try to close a window or quit the program without saving your work.

2. **Choose Quit from the File menu.**

   The program's window and menu titles disappear, and you are returned to the desktop.

➤ *See also:* • "Managing Multiple Programs Using MultiFinder" (next section)

Managing multiple programs using MultiFinder

Macintosh system software includes MultiFinder, a system file that can open and manage multiple programs at the same time.

MultiFinder provides

- automatic opening of specified programs, documents, and desk accessories at startup
- quick and easy switching between open programs
- copying and pasting of text and graphics between documents in different programs, without having to close the documents or quit the programs
- continuous access to the desktop for starting new programs, moving or deleting documents, and changing floppy disks
- background printing

To make efficient use of MultiFinder, you should also know how to manage your computer's memory.

➤ *See also:*
- "MultiFinder's Memory Requirements" (next section)
- "Managing System Memory" in this chapter
- "Specifying Items to Be Opened at Startup" in Chapter 3
- "Using Background Printing" in Chapter 6

MultiFinder's memory requirements

The Macintosh Classic comes with either 1 or 2 megabytes (MB) of random-access memory (RAM). Although you can use MultiFinder with only 1 MB, that amount of RAM is usually sufficient to open only one program and one or more desk accessories, or two programs that are not too complex (and thus do not require a large amount of memory).

If you have 2 MB of RAM, MultiFinder will be able to run more programs at once, though you may still encounter some memory limitations if you use memory-intensive programs.

If the programs you use require more memory in order to run simultaneously under MultiFinder, you may want to have additional memory added to your Macintosh Classic. Consult your authorized Apple dealer to have the RAM in your computer expanded.

➤ *See also:* • "Checking the Amount of RAM in Your Macintosh" in this chapter

Turning MultiFinder on

You turn MultiFinder on with the Set Startup command, which provides several options once MultiFinder is selected.

1. **Choose Set Startup from the Special menu.**

   The Set Startup dialog box appears.

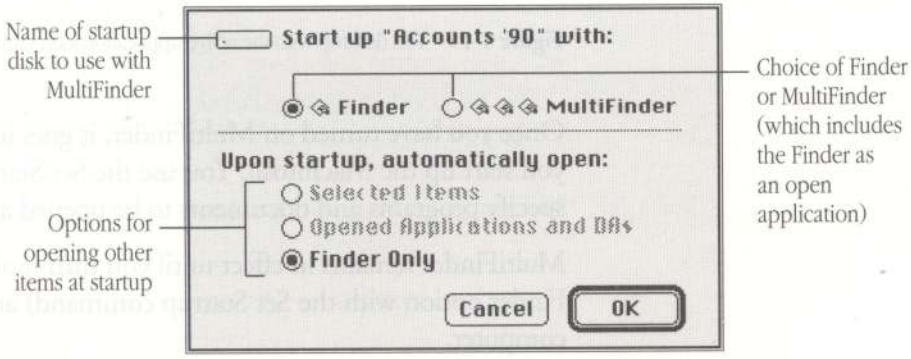


Figure 4-14 The Set Startup dialog box with the Finder selected

2. **Click the MultiFinder button.**

   The options in the lower part of the dialog box change when you click MultiFinder.

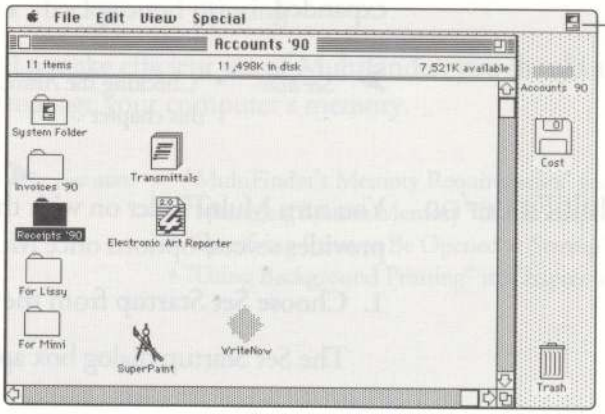
3. **Click the OK button.**

   The dialog box disappears.

4. **Choose Restart from the Special menu.**

   MultiFinder takes effect when the Macintosh restarts.

You know that MultiFinder is in effect when you see a small icon at the right side of the menu bar. This icon tells you which application is active.



Active-application icon (indicates the application in use when MultiFinder is on—in this case, the Finder)

Figure 4-15 The desktop with the active-application icon visible

Once you have turned on MultiFinder, it goes into effect whenever you start up the Macintosh. You use the Set Startup dialog box to specify programs and documents to be opened at startup as well.

MultiFinder remains in effect until you turn it off (by choosing the Finder option with the Set Startup command) and restart the computer.

➤ *See also:* • "Specifying Items to Be Opened at Startup" in Chapter 3

Switching programs or desk accessories with MultiFinder

You switch between open programs or desk accessories simply by clicking the active-application icon at the right side of the menu bar.

Figure 4-16 The menu bar showing the application program currently in use

Use this one-step procedure to switch programs or desk accessories with MultiFinder:

1. **Click the active-application icon at the right side of the menu bar until the program or desk accessory you want is visible.**

   Each time you click, the icon changes, a different program or desk accessory becomes active, and the menu bar changes to that of the new active application. If any documents in the new program are open, one of them becomes the active window.

❖ *Other ways to switch programs:* You can also change programs by clicking in a document window or by choosing the name of an active program from the Apple (🍎) menu. ❖

Starting a new program when using MultiFinder

When MultiFinder is in effect, you can start a program that is not currently open by opening it from the desktop.

1. **Click the active-application icon repeatedly until the small Macintosh appears.**

   The small Macintosh icon represents the Finder, which manages the desktop. The window of the disk or folder icon opened most recently becomes the active window.

2. **On the desktop, locate the icon of the program you want and open it by double-clicking.**

   You may have to close or resize one or more windows if the icon you want is hidden by them.

You will see an alert box if there is not enough system memory for the new program to be opened. If you see this alert box, click OK, then quit one or more of the applications you are currently using and try again.

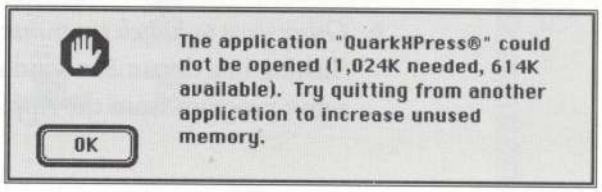


Figure 4-17 The MultiFinder alert box reporting insufficient memory

❖ *Other desktop operations:* When the Finder is active, you can also perform other standard desktop operations, such as renaming files or ejecting disks. ❖

➤ *See also:* • "MultiFinder's Memory Requirements" in this chapter

Managing system memory

Occasionally you may have to make an adjustment in your use of the computer's random-access memory (RAM) to work efficiently with large programs or with several programs open at once.

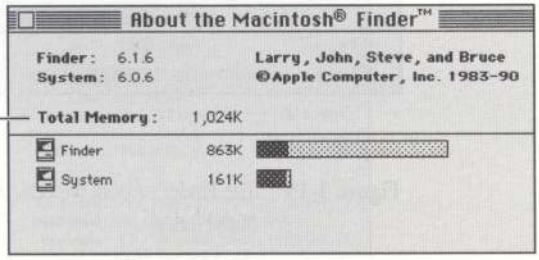
Becoming familiar with the amount of memory your Macintosh has and the memory requirements of the primary programs you use can help you take full advantage of the computer's capabilities.

Checking the amount of RAM in your Macintosh

If you do not know how much RAM your Macintosh Classic has, you can find out with the About the Finder command.

1. **While on the desktop, choose About the Finder from the Apple (🍎) menu.**

   The About window appears, displaying details about the Finder.



RAM in this computer (1024K = 1 MB)

Figure 4-18 The Finder's About window, showing the amount of memory available

2. **Click the close box to close the About window.**

Consult your authorized Apple dealer if you want to expand the RAM in your Macintosh.

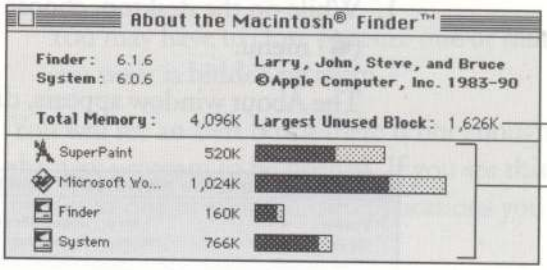
Checking the RAM available for programs in MultiFinder

When you are using MultiFinder, the Finder's About window also displays a graph depicting how much RAM is available for programs and how much memory each open program is currently using.

Follow these steps to see how RAM is being used:

1. **Choose About the Finder from the Apple (🍎) menu.**

   The About window appears, displaying a bar graph that indicates memory allocation.



The largest block of memory available for a program

The bars show memory available for each open program; the dark areas show how much is currently in use.

Figure 4-19 The Finder's About window, showing current memory use under MultiFinder

2. **Click the close box to close the About window.**

Clearing system memory for efficient operation

If you are using MultiFinder and have opened and closed a number of programs, your Macintosh memory can become fragmented so that you cannot open a large program. If you suspect that this problem is the cause of memory shortages when using MultiFinder, try quitting all the programs you have open, then restarting the ones you need.

Changing the memory allocation for a program

When you start an application program, the program automatically tells your system software how much RAM it needs. But on rare occasions (for example, if you see frequent messages that there is not enough memory for the program), the program may need a larger memory allocation. You allocate additional memory by adjusting the program's memory size in the Info window.

The program must not be in use when you reallocate memory.

Follow these steps to change a program's memory allocation:

1. **While on the desktop, select the program's icon.**
2. **Choose Get Info from the File menu.**

   The Info window appears.

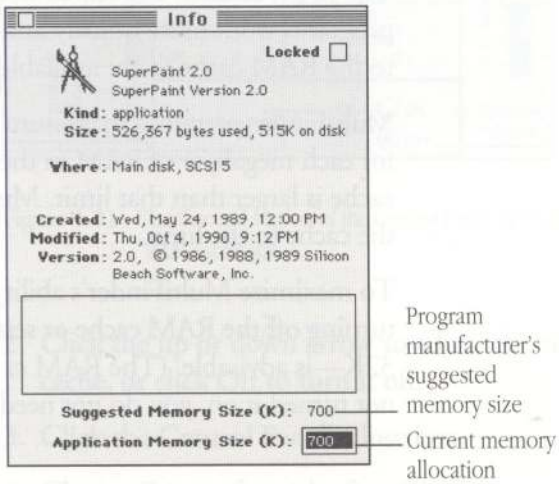


Figure 4-20 The Info window

3. **Drag across the number in the small box at the bottom of the window to select it.**
4. **Type a new number for the amount of memory you want to allocate.**

5. **Close the Info window to complete the allocation.**

❖ *Tab key shortcut:* You can also select the number in the small box at the bottom of the window by pressing the Tab key. ❖

△ **Important:** Do not set the memory allocation for a program to a size that is smaller than the manufacturer's suggested size. This could cause the program to function improperly or not at all. △

Adjusting the RAM cache

The number of programs and desk accessories you can use at the same time in MultiFinder is also affected by the size of the RAM cache, if you are using it.

The RAM cache is a specified reserve of memory that helps programs work more quickly and efficiently. The memory assigned to the RAM cache is not available to MultiFinder, however.

MultiFinder permits a maximum RAM cache of 384 kilobytes (K) for each megabyte of RAM in the computer. If your system's RAM cache is larger than that limit, MultiFinder automatically reduces the cache to the limit.

To maximize MultiFinder's ability to handle multiple programs, turning off the RAM cache or setting it to a very small size—such as 32K—is advisable. (The RAM cache is preset to Off, so if you have not turned it on, you do not need to worry about resetting it.)

You set the RAM cache in the General section of the Control Panel.

1. **Choose Control Panel from the Apple (🍎) menu while on the desktop.**

   The General section of the Control Panel appears.

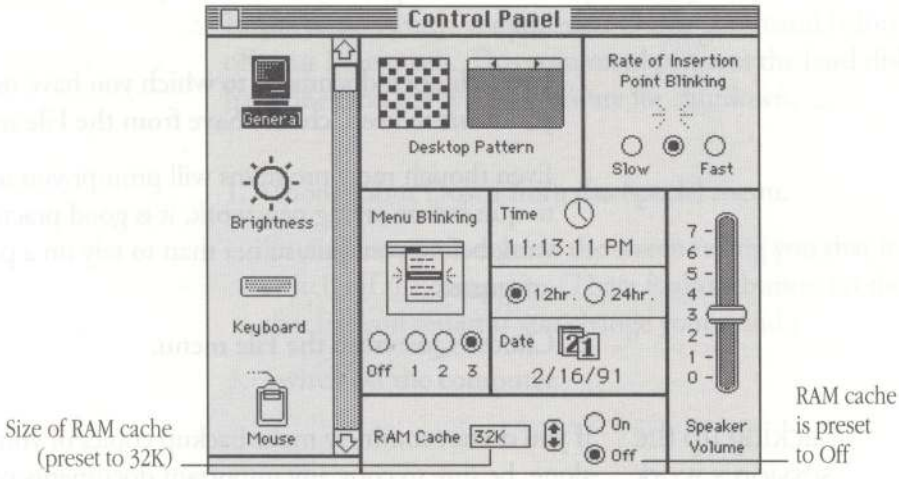


Figure 4-21 The General section of the Control Panel, showing preset RAM cache status

2. **Click the up or down arrow to adjust the size of the RAM cache, or click Off to turn it off.**

3. **Click the Control Panel's close box.**

4. **Choose Restart from the Special menu.**

   The adjusted RAM cache takes effect when the Macintosh restarts.

Ending a work session

When you have finished your work—with a program or for the day—it is a good idea to do some housekeeping before leaving the computer.

Quitting a program

When you are finished using a program, you should save the work you want to keep and then use the Quit command to return to the desktop.

1. **For each open document to which you have made changes that you want to keep, choose Save from the File menu.**

   Even though most programs will prompt you to save if you try to quit before saving new work, it is good practice to save your work before you quit, rather than to rely on a program's safeguards.

2. **Choose Quit from the File menu.**

Backing up the session's work

If you do not routinely make backup copies of your work as you go along, be sure to copy any important documents you have revised during the session. The safest backup practice is to copy your work onto a disk other than the one on which the original documents are stored.

1. **Insert a backup disk in a disk drive.**

   You can back up by making copies on the same disk, but making copies of your work on separate disks is advisable as well.

   If you have only one floppy disk drive, you will need to eject the disk currently in the drive in order to insert the backup disk.

2. **Copy the new files by dragging their icons to the icon of the backup disk (or into a folder on the backup disk).**

➤ *See also:*
- "Backing Up a Floppy Disk" in Chapter 7
- "Backing Up a Hard Disk" in Chapter 7

Shutting down the computer

When you have finished for the day and have backed up your work, you can shut down the Macintosh and switch it off. (Some people prefer to leave their computers on continuously, but it is a good idea to switch off the computer if you will not be using it for a few days.)

△ **Important:** Always use the Shut Down command before switching off your Macintosh. This command prepares the hard disk (if you have one) and the system software for shutdown. △

1. **Choose Shut Down from the Special menu.**

   You will see a message on the screen telling you that it is safe to switch off the computer. (There is also a button on the screen that lets you restart if you change your mind.)

2. **Switch off the computer.**

Organizing Files and Folders

The Macintosh computer's screen simulates an office filing system—with icons representing documents, folders, and even a trash container. Other icons represent application programs, other types of files, and disks.

By letting you treat these icons almost as if they were real objects, the Macintosh makes it easy for you to store and retrieve your work efficiently. Important aspects of this system include

- a "visual" filing system that lets you see at a glance how your work is organized
- the ability to display disk or folder contents as icons, or as lists arranged by name, date, size, or type of file
- a powerful desk accessory, Find File, to locate items by name or partial name
- simple, versatile methods for naming and renaming disks, files, and folders
- easy display of important information about a disk, file, or folder

Handling files and folders

You use standard Macintosh operations to move, copy, and name (or rename) files and folders. In addition, you can make one or more duplicates of any file or folder without changing its name or location.

All these operations take place on the desktop.

➤ *See also:* • Chapter 2, "Basic Macintosh Operations"

Moving a file or folder to a different location on the same disk

Moving a file or folder to a new location on a disk—for example, into or out of a folder—is a one-step procedure.

1. **Drag the file or folder icon from its current location to the new location.**

   As you drag, an outline of the icon moves with the pointer. When you release the mouse button, the icon appears at the new location.

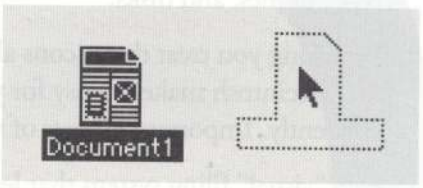


Figure 5-1 Moving a file

When you move a file or folder to a new location on the same disk, the file or folder exists only in the new location, not in the previous location.

➤ *See also:* • "Copying a File or Folder on the Same Disk" in this chapter

Copying a file or folder onto another disk

You drag a file or folder icon to the icon of a disk to copy it there.

1. **Drag the file or folder icon to the icon of the disk onto which you want to copy it.**

   As you drag, an outline of the icon moves with the pointer.

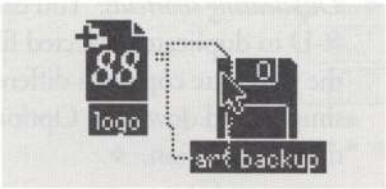


Figure 5-2 Copying a file onto another disk

   You can also drag the file or folder icon into a folder or an open window.

2. **When the disk icon becomes highlighted, release the mouse button.**

   When you release the button, the file or folder is copied onto the disk. A message reports the status of copying.

When you copy a file or folder onto another disk, the file or folder exists in both the original location (on the original disk) and the new location (on the new disk).

Copying a file or folder on the same disk

You can make a copy of a file or folder on the same disk by using the Duplicate command.

1. **Select the icon of the file or folder you want to copy.**

2. **Choose Duplicate from the File menu.**

   The file or folder is duplicated; it has the original's name, preceded by "Copy of." A message reports copying status.

3. **If necessary, rename the file or folder or move it to another folder on the disk.**

   You cannot give the duplicate exactly the same name as the original if you keep both of them in the same folder or at the disk's main directory level.

❖ *Duplicating shortcuts:* You can also use the keyboard shortcut ⌘-D to duplicate a selected file or folder. Or, if you want to store the duplicate copy in a different folder on the same disk, you can simply hold down the Option key while you drag the item to the new location. ❖

Renaming a file or folder

You use the standard desktop editing techniques to change the name of a file or folder. (You cannot rename system files on the current startup disk, files that have been locked using the Get Info command, or files or folders on a locked disk.)

Follow these steps to rename a file or folder:

1. **Select the icon of the file or folder.**

2. **Type a new name for the file or folder.**

   When you begin typing, the old name disappears and an insertion point blinks to the right of the characters you type.

3. **Click anywhere outside the file or folder icon.**

   The insertion point disappears when you click, and the icon is deselected.

➤ *See also:* • "Basic Editing on the Desktop" in Chapter 2

Using folders to organize your work

Like traditional filing systems, the Macintosh uses folders to store and organize information. Unlike a bulky paper filing system, however, the Macintosh lets you easily nest folders inside one another to create multiple levels of organization. And you can move folders around, changing the order in which they are nested.

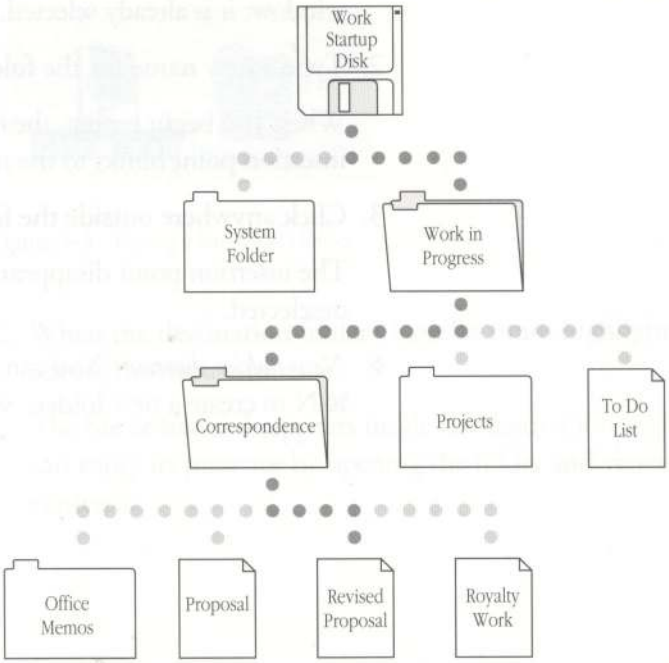


Figure 5-3 Three levels of folders and files on a floppy disk

Creating and naming folders

You use the New Folder command to create a new folder. You must be working on the desktop—not in a program—to create a new folder.

1. **Choose New Folder from the File menu.**

   A new folder named Empty Folder appears in the active window; it is already selected, so you can easily rename it.

2. **Type a new name for the folder.**

   When you begin typing, the old name disappears and an insertion point blinks to the right of the characters you type.

3. **Click anywhere outside the folder icon.**

   The insertion point disappears when you click, and the icon is deselected.

❖ *New Folder shortcut:* You can also use the keyboard shortcut ⌘-N to create a new folder. ❖

Placing items inside folders

You drag the icon of a file or folder to place it in a folder.

1. **Drag the file or folder icon to the icon of the folder into which you want to move it.**

   An outline of the icon moves with the pointer as you drag.

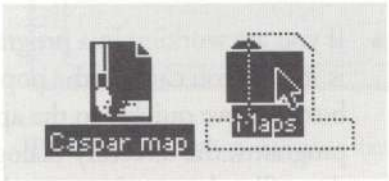


Figure 5-4 Placing a file inside a folder

2. **When the destination folder's icon becomes highlighted, release the mouse button.**

   The file or folder disappears inside the destination folder. You can verify its presence by opening the folder and viewing the contents.

Locating files and folders

Because the Macintosh lets you use many levels of folders, it can sometimes be hard to remember where everything is. There are three ways of locating files and folders on a disk:

- If you are working on the desktop and you know where an item is stored, you can simply open the appropriate folders until you see its icon.
- If you are working in a program and you know where an item is stored, you can use the pop-up menu in the directory dialog box to move quickly to the appropriate folder level. (In many programs, the directory dialog box will show only folders and those files that can be opened by the program. Other programs show all files, but dim the ones that cannot be opened by the program.)
- If you know an item's name (or part of its name) but cannot remember where it is stored, you can use a desk accessory called Find File to locate it. (Because it is a desk accessory, Find File is available whether you are working on the desktop or in a program.)

The following sections describe the latter two methods of locating files and folders.

➤ *See also:* • "Knowing Where You Are on the Macintosh" in Chapter 4

Moving quickly through levels of folders when using a program

When you are working in a program and want to open or save a document, you have a quick way to move around among multiple levels of folders on a disk: a *directory dialog box* that lets you see files and folders at different levels of nesting and even switch drives and eject disks.

If the document used most recently is in a folder, the folder's name in the dialog box is actually the title of a menu that "pops up" when you place the pointer on it and press the mouse button.

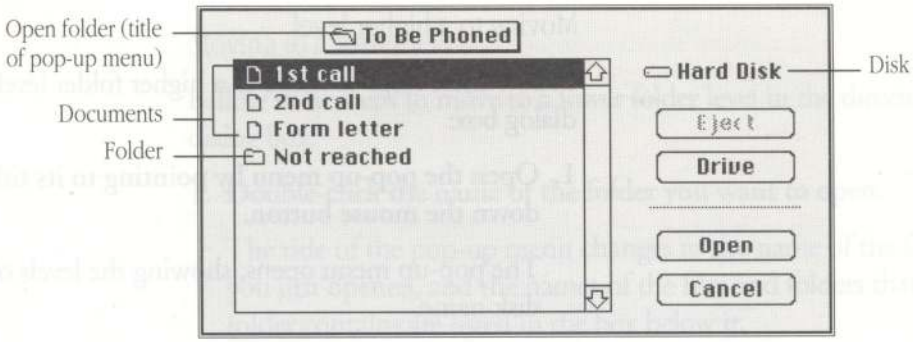


Figure 5-5 A directory dialog box showing a folder's contents

The folder "To be phoned" in Figures 5-5 and 5-6 is nested inside other levels of folders. Figure 5-6 shows those levels of folders: "To be phoned" is inside "'90 overdue," which is inside "Oct. unpaid," and so on. The last level in the pop-up menu is the disk.

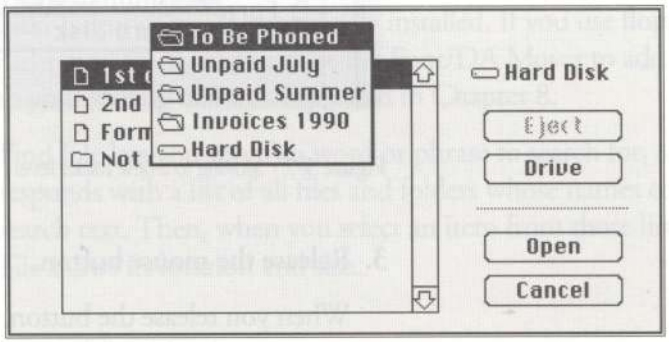


Figure 5-6 Open pop-up menu showing levels of folders and disk

When a pop-up menu is available in the directory dialog box of an application program, you can use it to move rapidly to another level of your filing system. The technique you use depends on whether you want to move to a higher level (nested in fewer folders) or a lower level (nested in more folders).

Moving to a higher level

Follow these steps to move to a higher folder level in the directory dialog box:

1. **Open the pop-up menu by pointing to its title and holding down the mouse button.**

   The pop-up menu opens, showing the levels of folders and the disk name.

2. **Drag the pointer to the name of the folder or disk to which you want to move.**

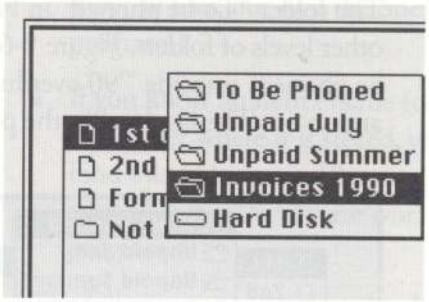


Figure 5-7 Moving to a new folder level

3. **Release the mouse button.**

   When you release the button, the folder or disk name you chose appears as the title of the pop-up menu in the dialog box, and the names of the files and folders it contains are displayed in the box below it. (In many programs, the list will show only folders and those files that can be opened by the program. Other programs show all files, but dim the ones that cannot be opened by the program.)

Moving to a lower level

Follow these steps to move to a lower folder level in the directory dialog box:

1. **Double-click the name of the folder you want to open.**

   The title of the pop-up menu changes to the name of the folder you just opened, and the names of the files and folders that folder contains are listed in the box below it.

2. **Repeat step 1 until you see the directory you want.**

Using Find File to locate files or folders by name or partial name

You can use the Find File desk accessory to locate a file or folder anywhere on a disk. Like other desk accessories, Find File resides in the Apple (🍎) menu and is available whether you are working on the desktop or in a program.

If you used the Installer to add system software to a startup hard disk, Find File was automatically installed. If you use floppy startup disks, however, you must use the Font/DA Mover to add Find File to your startup disks, as explained in Chapter 8.

Find File lets you specify a word or phrase to search for, and responds with a list of all files and folders whose names contain the search text. Then, when you select an item from those listed, Find File shows its location and size.

1. **Choose Find File from the Apple (🍎) menu.**

   The Find File window appears, with a blinking insertion point in the search text box.

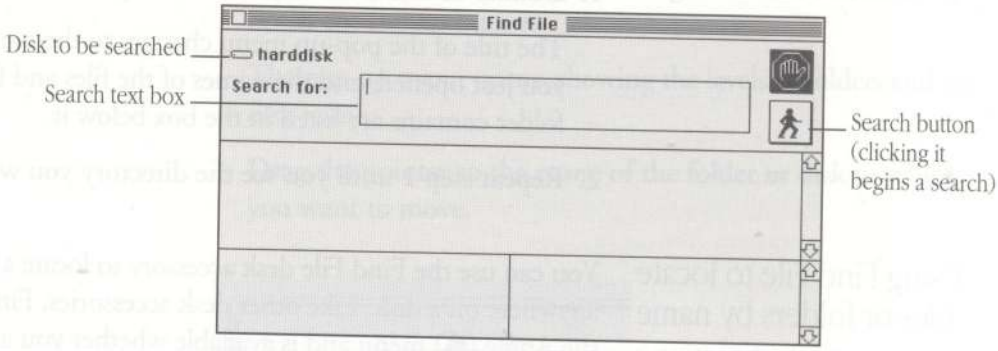


Figure 5-8 The Find File window

2. **If necessary, click the disk icon in the upper-left area of the window to switch disks for searching.**

3. **Type the text you want to locate.**

   The text can be the complete or partial name of a file or folder.

4. **Click the search button (the icon of a walking figure), or press Return.**

   Find File searches for the text, and then lists the files and folders whose names contain the text.

5. **Click the name of the item you want to locate.**

   You may need to scroll through the list to find the name you want.

   Information about the selected item and its location are displayed in the bottom panes of the Find File window.

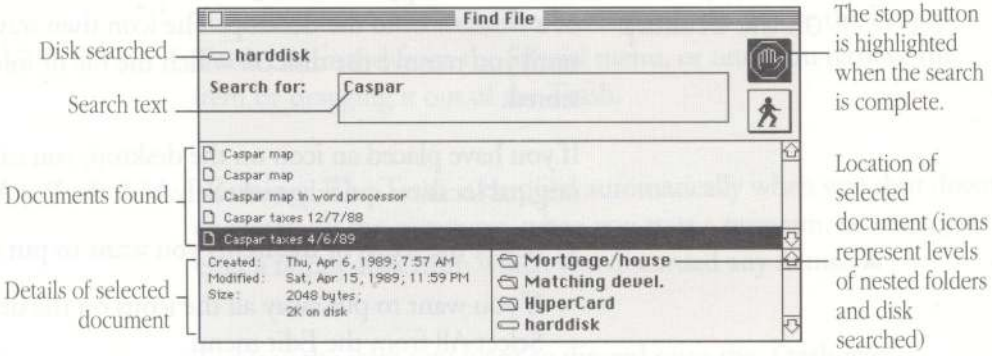


Figure 5-9 Find File showing search report and location of selected item

6. **(Optional) To move the selected file or folder to the desktop immediately, choose Move to Desktop from the Find File menu.**

   The Find File menu, which appears to the right of other menu titles in the menu bar, is available only when the Find File window is open.

❖ *Another searching feature:* Find File also lets you limit a search to a single folder's content with its Search Here command. To use this command, choose Search Here from the Find File menu. A dialog box (similar to the directory dialog box) appears, asking you to designate the folder you want to search. ❖

➤ *See also:* • "Putting Away Items on the Desktop" in this chapter

File and folder housekeeping

Like any filing system, the Macintosh system of folders is most efficient if you keep it well organized. This section describes how to put away items you have moved to the desktop, how to clean up the icons in a window or on the desktop, and how to discard files and folders you no longer need.

Putting away items on the desktop

Often the simplest way to use a file or folder is to drag its icon out of a window onto the desktop. The icon then stays on the desktop until you remove the disk on which the file or folder is actually stored.

If you have placed an icon on the desktop, you can replace it in its original location quickly and easily with the Put Away command.

1. **Select the icons of the items you want to put away.**

   If you want to put away all the icons on the desktop, choose Select All from the Edit menu.

2. **Choose Put Away from the File menu.**

   The selected items disappear from the desktop and are put back where they originated.

Cleaning up the icons in a window or on the desktop

When you move files or folders around, you may not always realign them perfectly. You can realign them using the Clean Up command in the Special menu.

1. **Click the window you want to clean up.**

   If you want to clean up the desktop instead, close all windows.

2. **Choose Clean Up Window from the Special menu.**

   If there are no windows open on the desktop, the command name is Clean Up Desktop. If any icons are selected, the command is named Clean Up Selection and it will realign only the selected icons.

❖ *An additional cleanup feature:* If you want to move all the icons into the upper-left corner of a window (or to the right side of the desktop), hold down the Option key while you choose Clean Up Window or Clean Up Desktop. ❖

Discarding files and folders

When you no longer have any use for a file or folder, you can free up the disk space it occupies by discarding it in the Trash. A discarded item remains in the Trash until you choose the Empty Trash command from the Special menu, or until you retrieve the item by dragging it out of the Trash.

▲ **Warning:** The Trash is emptied automatically when you shut down or switch off the computer, when you start a program, or when you eject a floppy disk from which you discarded any items. ▲

1. **Drag the item you want to discard onto the Trash icon.**

   The pointer and an outline of the icon move as you drag; the Trash icon becomes highlighted when the pointer reaches it.

2. **When the Trash is highlighted, release the mouse button.**

   When you release the mouse button, the Trash icon bulges to show that something is inside it.

3. **To erase the item in the Trash, choose Empty Trash from the Special menu.**

Getting directory information

The Macintosh provides easy access to details about the files, folders, and disks it manages. In addition to the Find File desk accessory described earlier in this chapter, you have two ways of getting this information quickly:

- The View menu, available from the desktop, offers several different views of disk or folder content.
- The Get Info command, also available from the desktop, presents details about individual icons.

Displaying items by icon, name, size, date, or kind

When you are working on the desktop, you can use the View menu to display the content of a directory window according to name, size, date, or kind, or by icon or small icon.

An icon view is useful when you need to move and select icons frequently. A directory arranged by name, size, date, or kind of file is useful when one of those attributes is the key information you need about the items in the window.

Use this one-step procedure to change your view of a window:

1. **Choose the view you want from the View menu.**

   The view in the active window changes to the format you chose from the View menu. When the View menu is open, a check mark indicates the view currently visible in the active window.

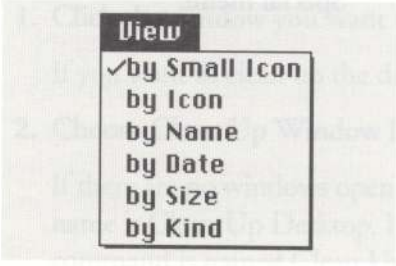


Figure 5-10 The View menu

Getting information about an icon

The Get Info command displays information about a single item on the desktop or in an open window.

1. **Select the icon about which you want information.**
2. **Choose Get Info from the File menu.**

   The Info window appears, displaying information about the selected icon. This window also includes a text box where you can add your own notes.

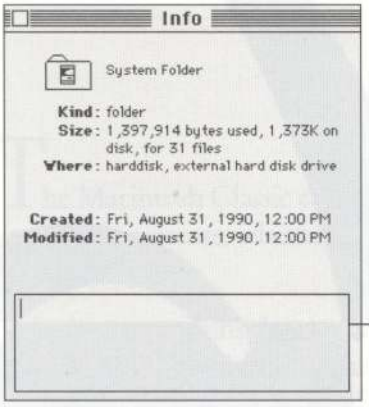


Figure 5-11 The Info window

3. **Click the Info window's close box when you are finished.**

❖ *Get Info shortcut:* You can use the keyboard shortcut ⌘-I to display information about the selected item. ❖

❖ *Other uses for the Info window:* You can also use the Info window to change the memory allocation for a program or to lock the contents of a file. ❖

➤ *See also:*
- "Changing the Memory Allocation for a Program" in Chapter 4
- "Protecting Information on a Disk" in Chapter 7

6

Printing Documents

The Macintosh Classic computer provides several different ways to print documents, whether you are using a program or working on the desktop.

This chapter explains the preparations you make for printing, summarizes the options you can choose for paper, image size, and print quality, and presents brief instructions for each printing operation. It also explains how to manage print jobs and use background printing.

Getting ready to print

Before you can print a document, you must connect a printer to your Macintosh and prepare the system software to use the printer.

➤ *See also:*
- "Preparing Your System Software" in Chapter 3
- "Installing a Font or Desk Accessory" in Chapter 8
- "Connecting a Printer" in Chapter 9
- "Using Your Macintosh Classic on a Network" in Chapter 9

Placing printer drivers in the System Folder

You must have a printer driver in your System Folder for each type of printer you want to use.

If you used the Installer to add system software to a hard disk—or to a floppy disk that you will use only with an ImageWriter printer—you can skip this procedure. (The installation has already copied the appropriate printer drivers to the System Folder.)

If you have a non-Apple printer, consult its documentation to determine what printer driver you need.

Follow these steps to add printer drivers to the System Folder:

1. **Select the icon of each printer driver you need.**
2. **Drag the driver icons to the System Folder on your startup disk.**

If you have multiple startup disks, repeat this process for each one.

Choosing a printer

You can have several *output devices,* such as printers, connected to your Macintosh—directly or by network. You select the printers and other devices you want to use with a desk accessory called the *Chooser.*

1. Select Chooser from the Apple (🍎) menu.

The Chooser window appears.

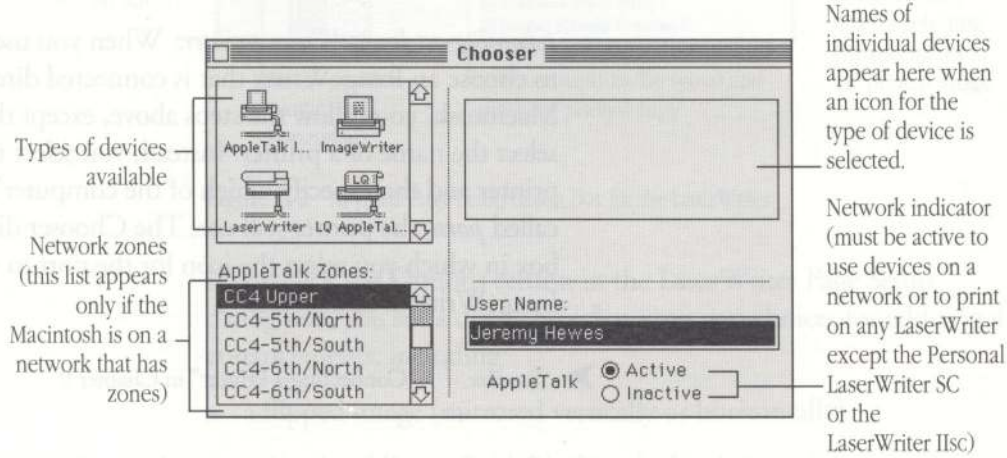


Figure 6-1 The Chooser

2. Click the icon for the type of printer you want to use.

The icons for printer types appear in the upper-left area of the Chooser. You may have to scroll to see the printer icon you want.

3. If necessary, select the network zone in which you want to choose a printer.

A list of zones appears in the lower-left area only if your Macintosh is on a network that is linked to other networks. You may have to scroll to see the zone name you want.

4. **Select the name of the printer you want to use.**

   The list of printers appears in the upper-right area of the Chooser. You may have to scroll to see the printer name you want.

   Your selection takes effect immediately.

5. **Click the Chooser's close box.**

❖ *Choosing an ImageWriter printer:* When you use the Chooser to choose an ImageWriter that is connected directly to your Macintosh, you follow the steps above, except that you don't select the name of a printer. Instead, you select the type of printer and then specify which of the computer's two sockets, called *ports,* the printer will use. The Chooser displays a dialog box in which you select the icon for the port to which your ImageWriter is connected. ❖

➤ *See also:* • "Connecting a Printer" in Chapter 9

Selecting Page Setup options

The Page Setup dialog box lets you choose from a number of paper sizes and printing enhancements.

1. **Prepare the document you want to print.**

2. **Choose Page Setup from the File menu.**

   The Page Setup command is available in the File menu whether you are working on the desktop or in a program.

   The Page Setup dialog box appears, with the preset choices (or those selected most recently) displayed. Figure 6-2 shows the Page Setup dialog box for the LaserWriter; Figure 6-3 shows the Page Setup dialog box for the ImageWriter.

3. **Select the paper size and printing enhancements you want, then click OK.**

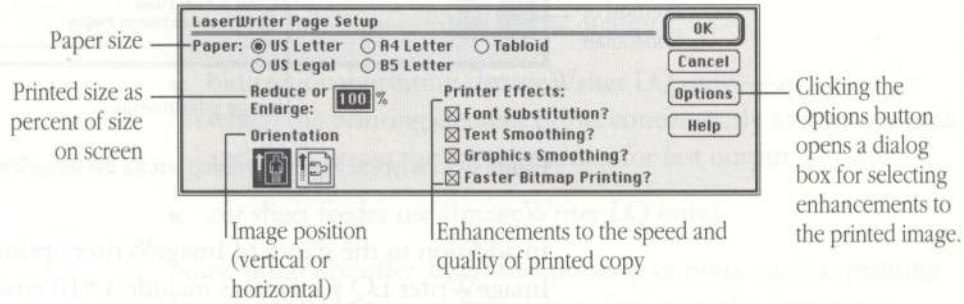


Figure 6-2 A typical Page Setup dialog box for the LaserWriter

If you click the Options button in the LaserWriter Page Setup dialog box, you see a dialog box that gives you choices for additional enhancements, including

- a flipped image (mirrored vertically or horizontally)
- an inverted image (with black and white reversed)
- alignment of bitmapped areas (providing greater image resolution but reducing the image by 4%)
- a larger print area (allowing more of the page to be printed but using more printer memory and thus limiting the number of downloadable fonts that can be used)
- capacity for unlimited downloadable fonts (*downloadable fonts* are typefaces stored separately from the printer and transmitted to it at the time of printing)

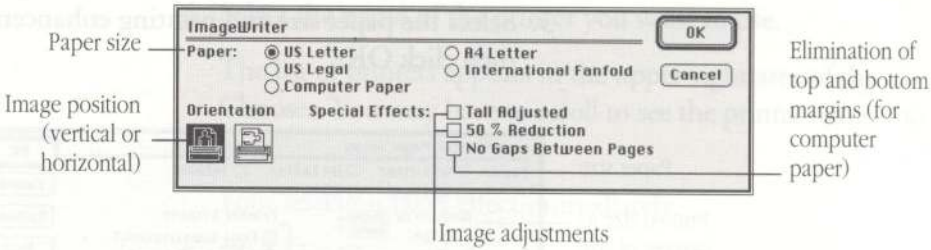


Figure 6-3 A typical Page Setup dialog box for the ImageWriter

In addition to the standard ImageWriter options, the ImageWriter LQ paper sizes include a #10 envelope, and it can print images that are reduced to 66% or 33% of original size.

You will see different options for each type of printer you use. Some programs provide additional options in their version of Page Setup. Selections made in the Page Setup dialog box remain in effect for the document until you change them.

Printing your work

Printing while using an application program is probably the most common method, but the Macintosh also lets you print one or more documents while working on the desktop.

Whenever you initiate printing (by choosing the Print command from the File menu), you use the Print dialog box to specify printing options. Figure 6-4 shows a typical Print dialog box for the LaserWriter.

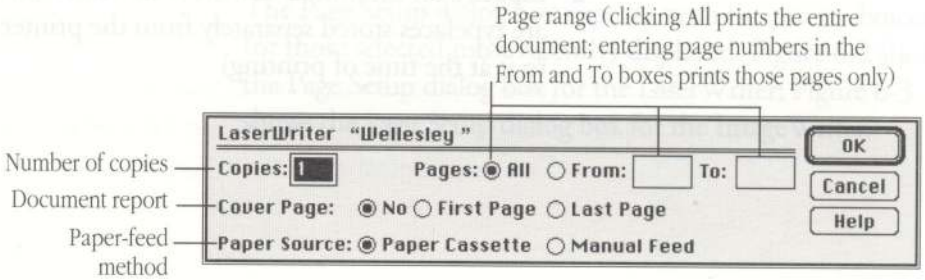


Figure 6-4 A typical Print dialog box for the LaserWriter

The ImageWriter models offer some different options for printing. These include

- print quality—a choice of Best, Faster, or Draft mode, which affects printing speed as well as quality
- bidirectional printing (ImageWriter LQ only)—an option in which the printing element prints continuously as it moves back and forth across the paper, making for fast output
- cut sheet feeder use (ImageWriter LQ only)

Some programs offer additional printing options, such as printing from first to last page or from last to first page of a document.

Before you click OK in the Print dialog box, make sure that the printer is switched on and that it has a supply of paper.

Printing from within a program

You can easily print a document from within a program. The document you want to print must be open, and must be the active window.

1. **Choose Print from the File menu.**

   The Print dialog box appears.

2. **Select the options you want in the Print dialog box, then click OK.**

   After a moment, a status box appears and remains on the screen until printing is completed. If you want to cancel the print job, press ⌘-period.

❖ *Printing shortcuts:* You can use the keyboard shortcut ⌘-P to initiate printing in most programs, and you can press Return instead of clicking OK in the Print dialog box. ❖

➤ *See also:* • "Printing While Using the Computer for Other Work" in this chapter

Printing from the desktop

You can print one or more documents created in the same application program from the desktop—without starting the program first.

1. **Select the documents you want to print by Shift-clicking their icons.**

   The group of documents must either be all in the same folder or all at the main level of the disk directory. If you are not using MultiFinder, the documents must all be created by the same program.

2. **Choose Print from the File menu.**

   The program starts automatically and the Print dialog box appears.

3. **Select the options you want in the Print dialog box, then click OK.**

   The printing status box appears, remaining on the screen until printing is complete. Then the program closes, and you see the desktop again.

❖ *Return key shortcut:* You can press Return instead of clicking OK in the Print dialog box. ❖

Printing a directory of disk or folder contents

You can print a directory of the files in the active window on the desktop.

The printed directory is a "snapshot" of the window's entire content, showing the files and folders as they appear in the window.

1. **Make sure the directory you want to print is displayed in the active window on the desktop.**

2. **Choose Print Directory from the File menu.**

   The Print dialog box appears.

3. **Select the options you want from the Print dialog box, then click OK.**

   The entire directory is printed in the format currently displayed, even if not all of the directory was visible in the window.

❖ *Return key shortcut:* You can press Return instead of clicking OK in the Print dialog box. ❖

➤ *See also:* • "Displaying Documents by Icon, Name, Size, Date, or Kind" in Chapter 5

Printing while using the computer for other work

By using MultiFinder, you can print on a LaserWriter while continuing to work with one or more programs. This feature, known as *background printing,* doesn't work with the ImageWriter.

➤ *See also:* • "Managing Multiple Programs Using MultiFinder" in Chapter 4

Using background printing

With MultiFinder in effect, you use the Chooser to turn on background printing.

1. **Select Chooser from the Apple (🍎) menu.**

   The Chooser window appears.

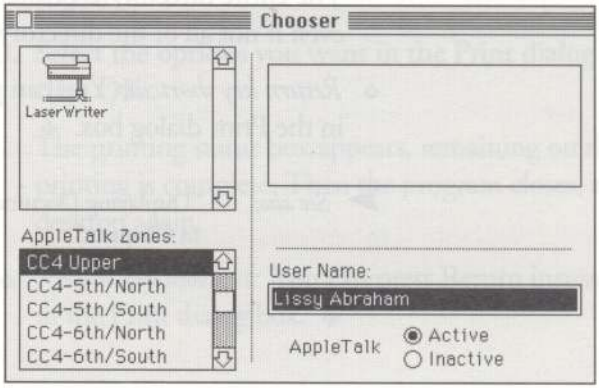


Figure 6-5 The Chooser

2. **Click the LaserWriter icon in the box on the upper left.**

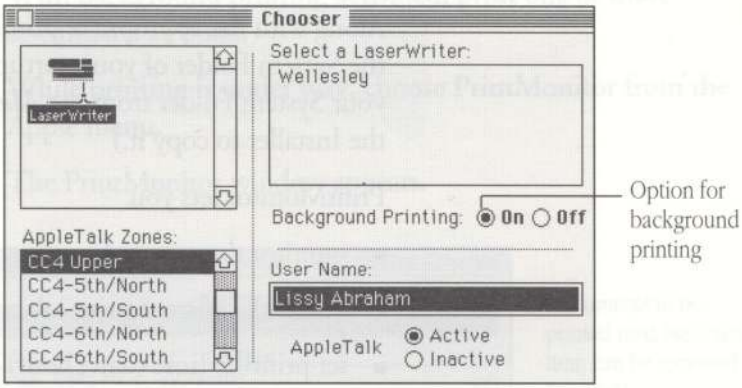


Figure 6-6 The Chooser with a LaserWriter selected

3. **If necessary, click the On button in the middle area of the window to turn on background printing.**

   A LaserWriter must be selected in the Chooser for the Background Printing option to be displayed.

4. **Click the Chooser's close box.**

5. **Print one or more documents as usual.**

   Select the icons of documents on the desktop, or display a document as the active window of a program, and then choose the Print command from the File menu.

   The Print dialog box appears; select the options you want and click OK.

You know that background printing is under way when you see the printing status box disappear. You may notice an occasional pause as you continue your work; the pause means that the Macintosh is processing the document for printing.

Managing printing jobs

You can control background printing with PrintMonitor, a resource supplied with the system software.

Along with the appropriate printer driver, PrintMonitor must be in the System Folder of your startup disk. (You can either drag it into your System Folder from the *Macintosh System Startup* disk or use the Installer to copy it.)

PrintMonitor lets you

- monitor the status of printing
- cancel the current print job or one waiting to print
- set printing time (date, hour) or postpone a job indefinitely
- monitor paper supply (PrintMonitor's icon—depicting a printer—blinks over the Apple logo at the left of the menu bar when the printer is out of paper)
- know when you need to feed paper manually (PrintMonitor's icon blinks over the Apple logo when you need to confirm that you are ready to begin)

Follow these steps to use PrintMonitor:

1. **With background printing activated, print one or more documents as usual.**

2. **While printing is under way, choose PrintMonitor from the Apple menu.**

   The PrintMonitor window appears.

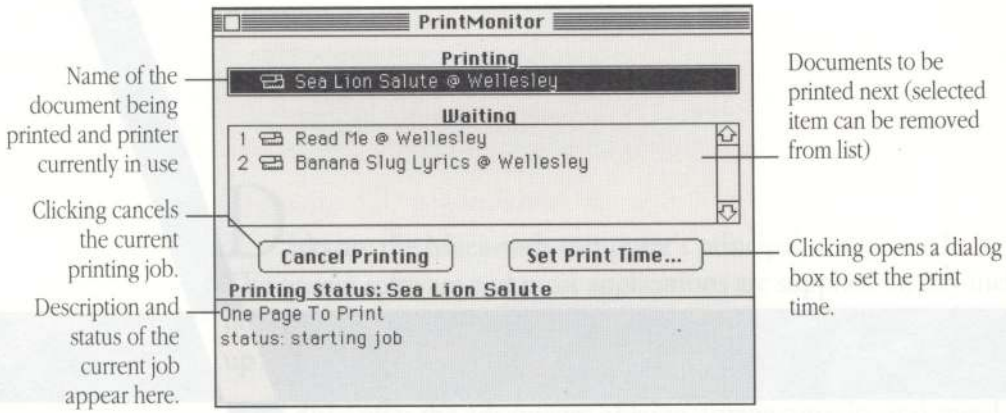


Figure 6-7 The PrintMonitor window

3. **Select the option you want, then click the close box.**

   You can cancel printing of the current document or select one of the documents waiting to print. (The Cancel Printing button changes to Remove from List when a waiting document is selected.) You can set a time and date for printing a selected document by clicking the Set Print Time button and entering the time and date in the dialog box that appears.

❖ *PrintMonitor shortcut:* You can also open the PrintMonitor window by clicking the active-application icon at the right side of the menu bar until PrintMonitor's icon (a printer) appears. ❖

➤ *See also:* • "Managing Multiple Programs Using MultiFinder" in Chapter 4

7

Managing Disks and Disk Drives

Disks are the Macintosh computer's principal storage medium. The system software and most applications are supplied on 3.5-inch floppy disks, which are also ideal for transporting data and backing up important work.

Hard disks offer the advantages of large storage capacity and speed of operation, although they are not as easily transported as floppy disks. A hard disk is sealed inside its drive and cannot be ejected; for that reason, the terms *hard disk* and *hard disk drive* are often used interchangeably.

The Macintosh Classic comes with a SuperDrive™ floppy disk drive and (in some cases) an internal hard disk drive. In addition to these built-in disk drives, you can connect external floppy and hard disk drives to your computer.

Using floppy disks

The floppy disks used in the Macintosh Classic are flexible plastic disks (the source of the name "floppy") inside a hard plastic case 3.5 inches wide. A metal shutter at one end of the case slides to one side when the disk is in the drive, exposing the flexible plastic on which information is stored. The plastic is coated with a magnetic layer similar to that of recording tape.

Disk capacities

The amount of information a floppy disk can store depends on its physical capacity, the type of disk drive in which it is used, and the way the disk is *initialized*—that is, the way its surface is electronically prepared to store data.

A Macintosh floppy disk has one of three capacities:

- 400 kilobytes (K), or *single-sided*
- 800K, or *double-sided*
- 1.4 megabytes (MB), or *high-density*

Labeling on the disk's case or metal shutter usually indicates whether the disk is single-sided, double-sided, or high-density (abbreviated "HD").

The SuperDrive in your Macintosh Classic is a high-density floppy disk drive that can accept disks of all three capacities. You do not have to use 1.4 MB disks. (This feature allows you to share disks with people who have earlier Macintosh models without SuperDrives.)

▲ **Warning:** If you have an 800K external disk drive—or if you use other Macintosh computers that have 400K or 800K internal disk drives—do not use 1.4 MB disks in those drives. Only a SuperDrive can use a 1.4 MB disk. Using a 1.4 MB disk in a 400K or 800K disk drive may damage the disk. ▲

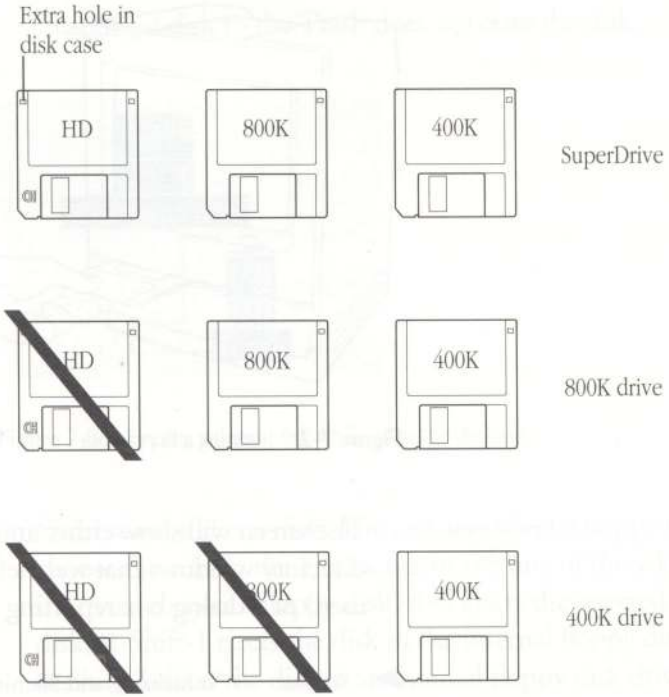


Figure 7-1 Proper use of floppy disks

The SuperDrive can also read from and write to 3.5-inch disks from computers that use the MS-DOS operating system.

➤ *See also:* • Appendix C, "Exchanging Disks and Files With MS-DOS Computers"

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The amount of information a floppy disk can store depends on its physical capacity, the type of disk drive in which it is used, and the way the disk is *initialized*—that is, the way its surface is electronically prepared to store data.

A Macintosh floppy disk has one of three capacities:

- 400 kilobytes (K), or *single-sided*
- 800K, or *double-sided*
- 1.4 megabytes (MB), or *high-density*

Labeling on the disk's case or metal shutter usually indicates whether the disk is single-sided, double-sided, or high-density (abbreviated "HD").

The SuperDrive in your Macintosh Classic is a high-density floppy disk drive that can accept disks of all three capacities. You do not have to use 1.4 MB disks. (This feature allows you to share disks with people who have earlier Macintosh models without SuperDrives.)

Ejecting a disk while using the desktop

Ejecting a floppy disk while using the desktop is a one-step procedure.

1. **Drag the disk icon to the Trash icon.**

   When the Trash icon becomes highlighted, release the mouse button. The disk is then ejected.

   Dragging a disk to the Trash does *not* erase the disk.

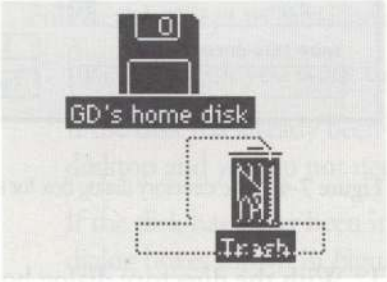


Figure 7-3 Ejecting a floppy disk while using the desktop

❖ *Other ways to eject a disk:* You can also select a floppy disk and choose Eject from the File menu, or use one of three keyboard shortcuts to eject a floppy disk. ⌘-E ejects the selected floppy disk; ⌘-Shift-1 ejects the disk in the internal floppy disk drive; ⌘-Shift-2 ejects the disk in an external floppy disk drive. ❖

If you are shutting down the computer, you do not need to eject any disks from your floppy disk drives; the computer automatically ejects all floppy disks as part of the shutdown process.

➤ *See also:*
- "Testing and Repairing a Disk" in Chapter 10
- "You Cannot Eject a Floppy Disk" in Chapter 10

Ejecting a disk from within a program

You can eject a disk when you are working in a program by using a command, such as Open or Save As, that displays a directory dialog box.

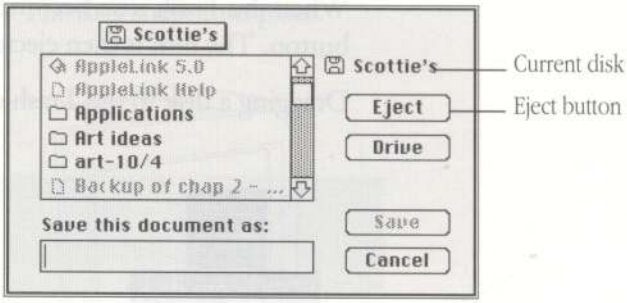


Figure 7-4 The directory dialog box for saving

1. **With the directory dialog box displayed in a program, click the Drive button to locate the disk you want to eject.**

   Skip this step if the disk name displayed is the one you want.

2. **Click the Eject button in the dialog box.**

   The disk is ejected. You can then insert a different floppy disk. The Eject button is dimmed, and thus does not operate, when a hard disk is selected.

Initializing and naming a floppy disk

With your SuperDrive, you can initialize floppy disks at three capacities: 400K, 800K, and 1.4 MB. (To do so, you need the appropriate type of disk.) You name the disk when you initialize it.

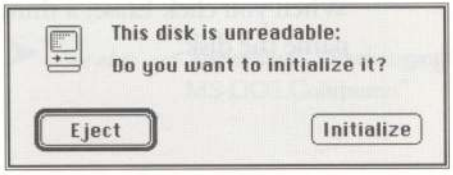
▲ **Warning:** When you initialize a disk, all information on it is erased. Be sure that you have no need for any of the files on any disk you plan to initialize. ▲

Follow these steps to initialize and name a floppy disk:

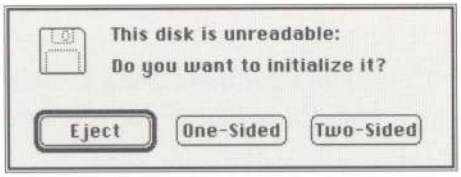
1. **Insert the disk you want to initialize in any disk drive.**

   If the disk has already been initialized, its icon appears on the desktop and you do not need to follow this procedure.

   If the disk has never been initialized, you see one of the two dialog boxes shown in Figure 7-5. (The dialog box you see depends on the capacity of the disk you inserted.)



What you see when you insert an uninitialized 1.4 MB disk



What you see when you insert an uninitialized 400K or 800K disk

Figure 7-5 First dialog box for initializing a floppy disk

2. **Click Initialize (for a 1.4 MB disk), Two-Sided (for an 800K disk), or One-Sided (for a 400K disk).**

   You can click Eject if you do not want to initialize the disk.

   When you click any of the initializing options, a second dialog box appears, advising you that initializing will erase the disk.

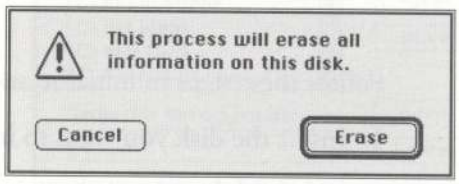


Figure 7-6 Second dialog box for initializing a floppy disk

3. **Click the Erase button.**

   You can click Cancel to avoid erasing the disk.

   When you click Erase, a third dialog box appears, asking you to name the disk.

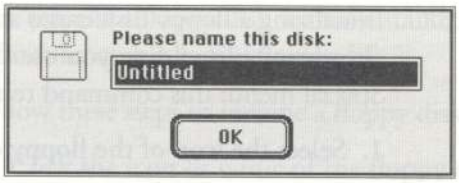


Figure 7-7 Third dialog box for initializing a floppy disk

4. **Type the name you want for the disk.**

   If you do not type a new name, the disk will have the name "Untitled" when it is initialized. (You can change the disk name later by renaming its icon on the desktop.)

5. **Click OK.**

   Initialization proceeds, with a message reporting its progress. When the process is complete, the disk icon appears on the desktop, with the name you typed (or "Untitled," if you didn't type a name).

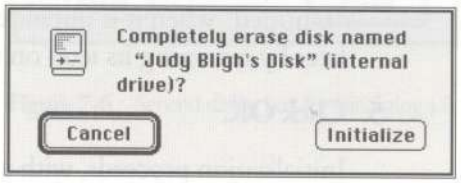
➤ *See also:* • Appendix C, "Exchanging Disks and Files With MS-DOS Computers"

Erasing a floppy disk

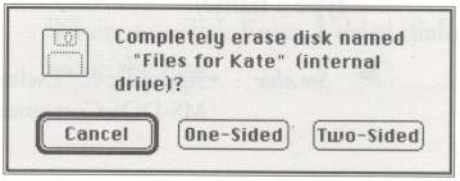
Initializing a floppy disk erases any information on it. To erase an already initialized disk, you use the Erase Disk command in the Special menu; this command reinitializes the disk.

1. **Select the icon of the floppy disk you want to erase.**
2. **Choose Erase Disk from the Special menu.**

   You will see one of the two alert boxes shown in Figure 7-8. (The alert box you see depends on the capacity of the disk you inserted.)



What you see when erasing a 1.4 MB disk



What you see when erasing a 400K or 800K disk

Figure 7-8 Alert box for erasing a floppy disk

3. **Click Initialize (for a 1.4 MB disk), Two-Sided (for an 800K disk), or One-Sided (for a 400K disk).**

   You can click Eject if you do not want to erase the disk.

   When you click any of the erasing options, the disk is erased and reinitialized.

Renaming a floppy disk

You rename a floppy disk with the standard editing steps. (You cannot rename a locked floppy disk.)

Follow these steps to rename a floppy disk:

1. **Click the icon or name of the floppy disk you want to rename.**

   Selecting the icon selects its name, and vice versa.

2. **Type a new name for the disk.**

   When you begin typing, the pointer disappears. The insertion point blinks at the end of the text you type.

3. **Click anywhere outside the disk icon.**

   When you click, the insertion point disappears and the icon is deselected.

➤ *See also:*
- "Renaming a Hard Disk" in this chapter
- "Basic Editing on the Desktop" in Chapter 2

Backing up a floppy disk

Although floppy disks are designed to last through thousands of hours of use, they can become damaged or worn. So it is wise to make backup copies of important work and application programs, especially if you use only floppy disks with your Macintosh.

One way of backing up your work is to save copies of individual files or folders on more than one disk. But for essential software, such as startup disks, system software master disks, and program master disks, you will probably want to back up the entire disk.

Follow these steps to back up an entire floppy disk:

1. **Drag the icon of the floppy disk you want to back up (the *source disk*) onto the icon of the disk on which the copy will be made (the *destination disk*).**

   The destination disk can be either a floppy disk (as pictured in Figure 7-9) or a hard disk.

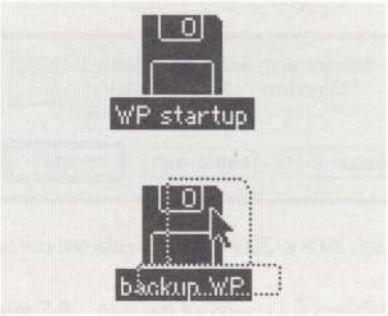


Figure 7-9 Backing up a floppy disk

If the destination disk is a floppy disk, an alert box appears, asking you to confirm that the information being copied should replace the contents of the destination disk.

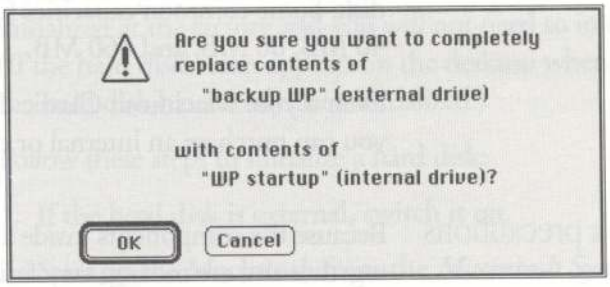


Figure 7-10 Alert box for backing up a floppy disk

If the destination disk is a hard disk, an alert box appears, letting you know that the contents of the source disk will be placed on the hard disk in a folder with the same name as the source disk.

2. **Read the message to be sure you are making the correct decision.**

3. **Click OK.**

You can click Cancel if you decide that you do not want to back up the disk.

When you click OK, your disk is backed up; a message reports the progress of copying.

❖ *One floppy disk drive:* If you have only one floppy disk drive (and no hard disk), you can use this backup procedure but you will have to swap disks a number of times. ❖

➤ *See also:*
- "Backing Up a Hard Disk" in this chapter
- "Saving a Copy of a Document Onto a Different Disk" in Chapter 4

Using a hard disk

A *hard disk* consists of one or more metal disks permanently sealed inside a drive compartment. The drive's sealed environment permits extremely fast reading and writing of information, and the disk or disks inside a drive can store vastly more data than can a floppy disk. Some common capacities for hard disk drives are 20 MB, 40 MB, 80 MB, and 160 MB.

Even if your Macintosh Classic does not have an internal hard disk, you can purchase an internal or external hard disk at a later date.

Hard disk precautions

Because the components inside a hard disk drive are very close together and are moving very fast when the drive is switched on, these drives should be treated with care.

Observe these precautions when working with a hard disk:

- Avoid jostling or rough handling of the drive. Never move your Macintosh when the hard disk drive is operating.
- Always keep external drives on a sturdy, level surface.
- Operate a hard disk at temperatures between 50 and 104 degrees Fahrenheit (between 10 and 40 degrees Celsius) and at a relative humidity of 20 to 80 percent.
- Avoid spilling any liquids on or near the drive.
- Do not expose the drive to hazardous vapors, such as those from cleaning solvents.

Initializing and naming a hard disk for the first time

You use the Apple HD SC Setup program, supplied on the *Macintosh System Startup* disk, to initialize and name a hard disk for the first time.

If your computer has an internal hard disk, the disk was probably initialized at the factory and you will not need to initialize it again. (If the hard disk's icon appears on the desktop when you start up, the hard disk has already been initialized.)

Follow these steps to initialize a hard disk:

1. **If the hard disk is external, switch it on.**
2. **Start up the Macintosh from the *Macintosh System Startup* disk.**
3. **Open the System Startup disk icon by double-clicking it.**
4. **Start Apple HD SC Setup by double-clicking its icon.**

   The program's main dialog box appears.

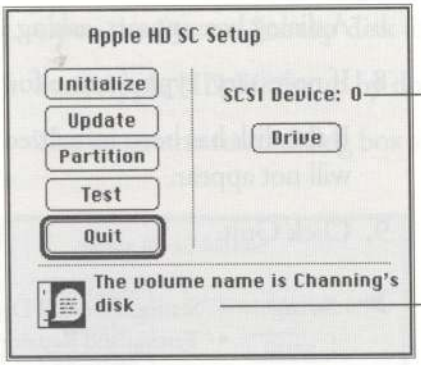


Figure 7-11 The main dialog box of Apple HD SC Setup

5. **If necessary, click the Drive button to select the hard disk you want to initialize.**

   The current disk's SCSI device number is displayed above the Drive button; the disk's name is shown in the message area at the bottom of the dialog box.

6. **When the number and name of the hard disk you want are displayed, click Initialize.**

   A dialog box appears, asking you to confirm or cancel your decision to initialize.

7. **Click Init to initialize the hard disk.**

   When you click, the pointer becomes a spinning beach ball and the message area of the dialog box reports the status of initialization. After a while, the computer's alert sound signals the end of the process and a message reports successful initialization. (If you see a report that initialization has failed, begin the process again.)

   A dialog box appears, asking you to name the disk.

8. **If necessary, type a name for the hard disk, then click OK.**

   If the disk has been initialized previously, the naming dialog box will not appear.

9. **Click Quit.**

➤ *See also:*
- "Setting the SCSI Device Number" in Chapter 9
- "Testing and Repairing a Disk" in Chapter 10

Partitioning a hard disk

You *partition* a hard disk—that is, divide its storage area into two or more separate sections—so that the disk can be used by different types of computers, such as the Macintosh and the Apple IIGS®. The instructions that follow provide a summary of the partitioning process; be sure to consult the documentation for the other computer with which you will use the partitioned hard disk for details regarding your choice of partitioning options.

▲ **Warning:** When you partition a hard disk, all information on it is erased. Be sure that you have no need for any of the files on any hard disk you plan to partition. ▲

Follow these steps to partition a hard disk:

1. **If the hard disk is external, switch it on.**
2. **Start up the Macintosh from the *Macintosh System Startup* disk.**
3. **Open the System Startup disk icon by double-clicking it.**
4. **Start Apple HD SC Setup by double-clicking its icon.**
   The program's main dialog box appears.

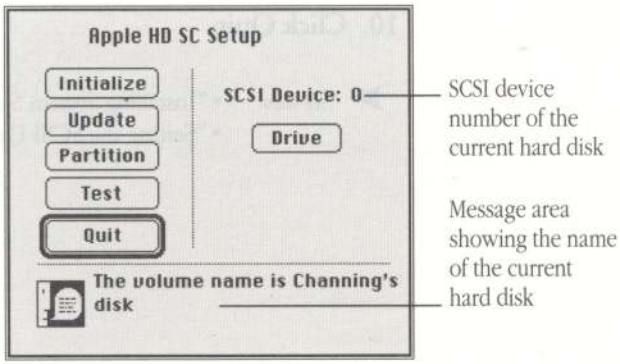


Figure 7-12 The main dialog box of Apple HD SC Setup

5. **If necessary, click the Drive button to select the hard disk you want to partition.**

   The current disk's SCSI device number is displayed above the Drive button; the disk's name is shown in the message area at the bottom of the dialog box.

6. **When the number and name of the hard disk you want are displayed, click Partition.**

   A dialog box appears, listing a number of options for partition sizes.

7. **Select a standard partition size from the list, or click Custom to adjust partition size.**

8. **Click OK.**

   When you click OK, a dialog box asks you to confirm or cancel your decision to partition.

9. **Click OK again to partition the hard disk.**

   When you click OK, the pointer becomes a wristwatch and the message area of the dialog box reports the status of partitioning. After a while, the computer's alert sound signals the end of the process and a message reports successful partitioning. (If you see a report that partitioning has failed, begin the process again.)

10. **Click Quit.**

➤ *See also:*
- "Installing System Software" in Chapter 3
- "Setting the SCSI Device Number" in Chapter 9

Erasing a hard disk

You can erase a hard disk using the Erase Disk command. This command reinitializes the disk.

1. **Select the icon of the hard disk you want to erase.**
2. **Choose Erase Disk from the Special menu.**

   An alert box appears, asking you to confirm that you want to initialize the disk and giving you a chance to cancel the erasure.

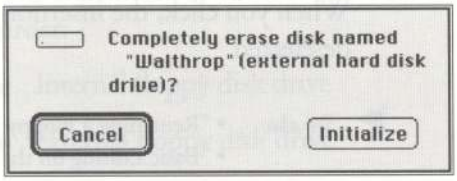


Figure 7-13 Alert box for erasing a hard disk

3. **Click the Initialize button.**

   You can click Cancel if you do not want to erase the disk.

   When you click Initialize, the disk is erased and initialized. A message on the screen reports the progress of this procedure.

Renaming a hard disk

You rename a hard disk with the standard editing steps.

1. **Select the icon of the hard disk you want to rename.**
2. **Type a new name for the disk.**

   When you begin typing, the pointer disappears. The insertion point blinks at the end of the text you type.
3. **Click anywhere outside the disk icon.**

   When you click, the insertion point disappears and the icon is deselected.

➤ *See also:*
- "Renaming a Floppy Disk" in this chapter
- "Basic Editing on the Desktop" in Chapter 2

Backing up a hard disk

You can back up the work you store on a hard disk by copying individual files in the usual way (dragging their icons to the icon of another disk).

You can also use a commercial backup program to copy some or all files from a hard disk to another hard disk, to a tape drive, or to a series of floppy disks.

Whatever method you use, be sure to back up important files on your hard disk regularly.

➤ *See also:*
- "Backing Up a Floppy Disk" in this chapter
- "Backing Up the Session's Work" in Chapter 4

Startup disk sequence

The Macintosh follows a set procedure, called the *scanning order,* to locate a startup disk. The computer always looks first in the floppy disk drives, then at hard disks.

You can specify which hard disk will be first in the computer's scanning order by using the Startup Device section of the Control Panel.

The scanning order for a startup disk

The Macintosh scans disk drives for a startup disk in the following order:

- internal floppy disk drive
- external floppy disk drive
- startup device set in the Control Panel
- internal SCSI hard disk (the computer waits 15 seconds for the internal drive to warm up)
- external SCSI hard disk (if more than one, in descending order of device numbers)
- internal SCSI hard disk (the computer returns to this drive and waits another 15 seconds)
- floppy disk drive (if no startup disk has been recognized, the computer displays the icon of a floppy disk with a blinking question mark and waits for a startup disk to be inserted in a floppy drive)

➤ *See also:* • "Specifying Items to Be Opened at Startup" in Chapter 3
• "Setting the SCSI Device Number" in Chapter 9

Designating which hard disk will be your startup device

If you use more than one hard disk with your Macintosh, you should specify which one you want to use as the startup disk. You use the Startup Device section of the Control Panel for this task.

When you designate a particular hard disk as the startup device, it precedes all other hard disks in the scanning order. (In other words, if there is no startup disk in any floppy disk drive, the computer attempts to start up from the hard disk you designated.)

Follow these steps to assign a particular hard disk as the startup device:

1. **Choose the Control Panel desk accessory from the Apple (🍎) menu.**

   The General section of the Control Panel appears.

2. **Scroll if necessary, then select the Startup Device icon in the left area of the Control Panel.**

   The Startup Device section of the Control Panel appears. The area on the right displays an icon for the internal hard disk (if any) and for every initialized external hard disk that is connected to the computer and switched on.

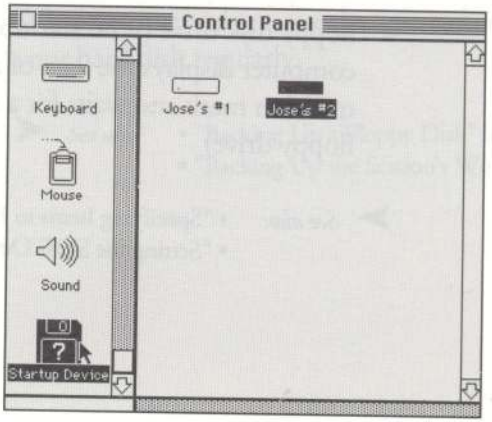


Figure 7-14 The Startup Device section of the Control Panel

3. **Click the icon of the hard disk you want to be the startup device.**

   The hard disk you designate as a startup device must be a startup disk. (In other words, it must contain a System Folder.)

4. **Click the Control Panel's close box.**

5. **Choose Restart from the Special menu.**

   The computer restarts, using the disk you specified as the startup device.

➤ *See also:*
- "The Scanning Order for a Startup Disk" (previous section)
- "Installing System Software" in Chapter 3

Protecting information on a disk

You can protect all the information on a floppy disk by *locking* the disk itself, or you can lock individual documents and applications in the Info window.

The information in a locked file or disk cannot be changed or thrown away; it can usually be opened or copied, however.

Locking a floppy disk

You adjust a tab at one corner on the back of the disk's plastic case to lock it, a one-step procedure.

1. **Slide the tab toward the corner of the disk with the tip of a ball-point pen (or a similar tool).**

   The disk is locked when the tab is closer to the corner and an opening is visible in the disk's case.

Sliding the tab over the opening unlocks a floppy disk.

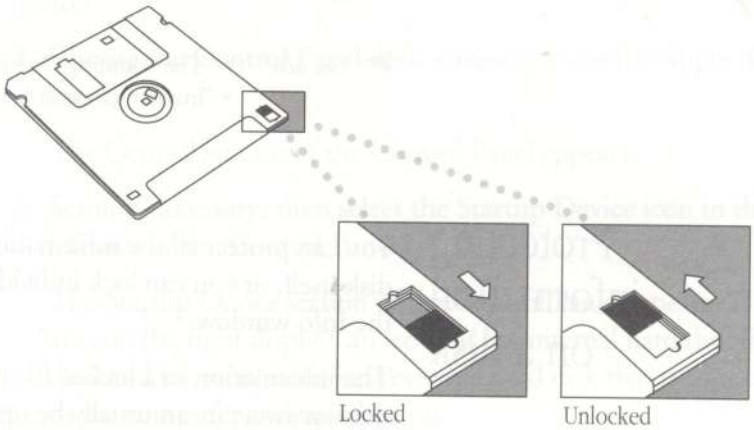


Figure 7-15 Locking and unlocking a floppy disk

Locking documents

You use the Get Info command to lock a document, whether on a floppy disk or a hard disk.

1. **Select the icon of the document you want to lock.**
2. **Choose Get Info from the File menu.**

   The Info window appears.

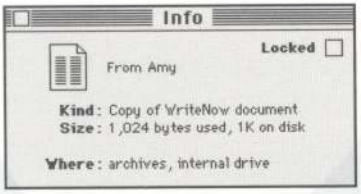


Figure 7-16 The Info window

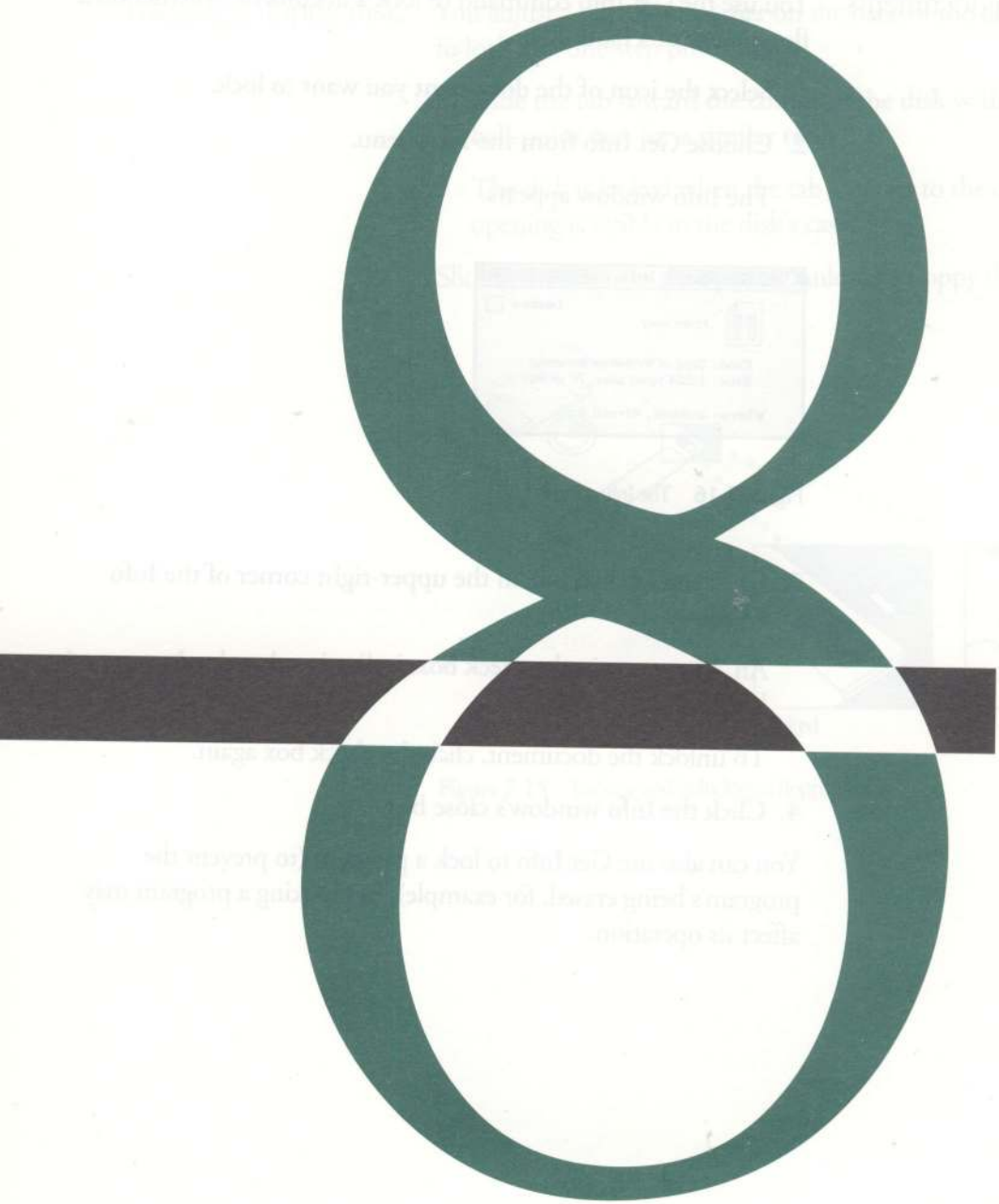
3. **Click the Locked box in the upper-right corner of the Info window.**

   An 'X' appears in the check box, indicating that the document is locked.

   To unlock the document, click the check box again.

4. **Click the Info window's close box.**

You can also use Get Info to lock a program (to prevent the program's being erased, for example), but locking a program may affect its operation.



Personalizing Your Macintosh Classic

The Macintosh Classic computer is designed to let you adjust some aspects of its operation and the appearance of its screen. These customizable items include

- mouse operation
- keyboard operation
- sound and volume
- time and date
- the look of the desktop
- fonts and desk accessories

Most of these elements are adjusted with the Control Panel desk accessory, which is available whether you are working on the desktop or in a program. Two exceptions are fonts and desk accessories, which you add or remove with a program called the Font/DA Mover on the *Macintosh System Additions* disk.

Adjusting mouse operation

You can modify two aspects of mouse operation—pointer movement and double-clicking speed—in the Mouse section of the Control Panel.

Setting the correlation between mouse and pointer movement

The correlation between mouse and pointer movement, called *mouse tracking,* can be adjusted so that the pointer moves the same distance on the screen as the mouse moves, or so that the pointer moves a greater or lesser distance than the mouse.

Mouse tracking is preset to medium fast when you install the system software. The options for tracking are

- Slow—the mouse and the pointer move the same distance
- Fast—the pointer moves twice as far as the mouse
- buttons between Slow and Fast—graduations between one-for-one and two-for-one pointer and mouse movement
- Very Slow/Tablet—the pointer moves less distance than the mouse, a useful setting for drawing with the mouse or using a graphics tablet

Follow these steps to adjust mouse tracking:

1. **Choose Control Panel from the Apple (🍎) menu.**

   The Control Panel opens, with the General section displayed.

2. **Scroll through the area on the left if necessary to locate the Mouse icon, then click it to display the Mouse section.**

   The Mouse section of the Control Panel appears. The pointer becomes a crosshair when you place it in the Mouse Tracking area.

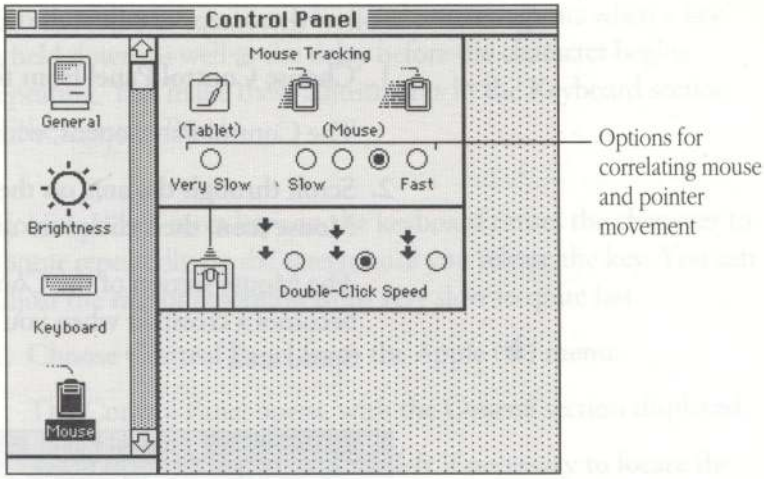


Figure 8-1 The Mouse section of the Control Panel

3. **Click the button for the tracking option you want.**

   The new tracking option is in effect; you can test it by moving the mouse.

Your choice remains in effect until you choose a different tracking option.

➤ *See also:* • "Easier Mouse Use With Mouse Keys" in Appendix D

Setting the double-clicking speed

Macintosh system software is preset to expect a certain time interval between the two clicks in a double-click of the mouse button. If you normally double-click more slowly than expected, the computer may interpret your double-click as two single clicks. Or if you normally click very quickly, two unrelated clicks may be interpreted as a double-click.

You can adjust the interval allowed between clicks in a double-click with the Mouse section of the Control Panel.

Follow these steps to adjust the double-clicking speed:

1. **Choose Control Panel from the Apple (🍎) menu.**

   The Control Panel opens, with the General section displayed.

2. **Scroll through the area on the left if necessary to locate the Mouse icon, then click it to display the Mouse section.**

   The Mouse section of the Control Panel appears. The pointer becomes a crosshair when you place it in the Double-Click Speed area.

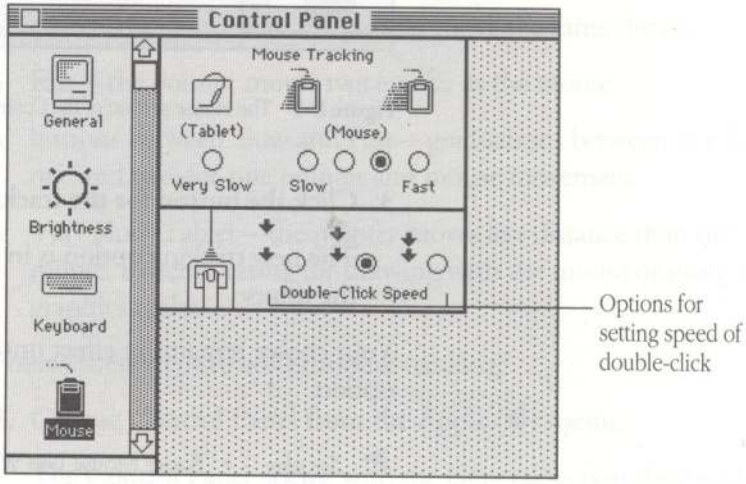


Figure 8-2 The Mouse section of the Control Panel

3. **Click the button for the double-clicking speed you want.**

   When you click, the mouse button on the screen is highlighted twice at the rate you selected.

Your choice remains in effect until you choose a different double-clicking speed.

Adjusting keyboard operation

You can adjust the rate at which a character repeats when a key is held down, as well as the delay before the character begins repeating. You make these adjustments in the Keyboard section of the Control Panel.

Setting the keys' repeat rate

Holding down most keys on the keyboard causes the character to appear repeatedly on the screen until you release the key. You can adjust the rate of repetition from very slow to quite fast.

1. **Choose Control Panel from the Apple (🍎) menu.**

   The Control Panel opens, with the General section displayed.

2. **Scroll through the area on the left if necessary to locate the Keyboard icon, then click it to display the Keyboard section.**

   The Keyboard section appears. The pointer becomes a crosshair when you place it in the Key Repeat Rate area.

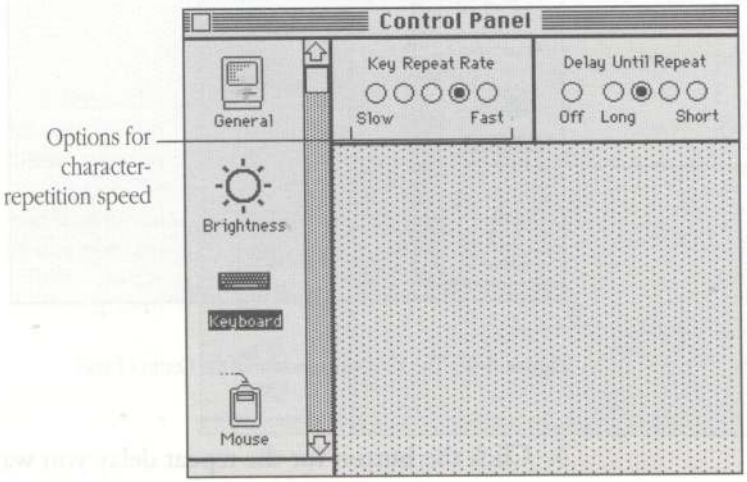


Figure 8-3 The Keyboard section of the Control Panel

3. **Click the button for the repeat rate you want.**

Your choice remains in effect until you choose a different rate.

Setting the delay before keys repeat

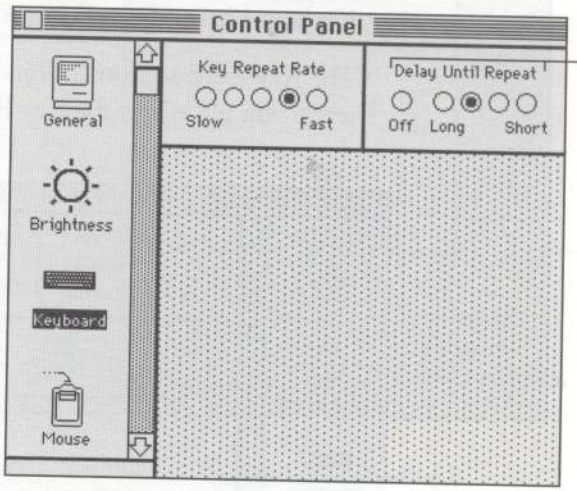
You can adjust the keyboard's operation to your "touch" by setting the delay before a character begins repeating when a key is held down.

1. **Choose Control Panel from the Apple (🍎) menu.**

   The Control Panel opens, with the General section displayed.

2. **Scroll through the area on the left if necessary to locate the Keyboard icon, then click it to display the Keyboard section.**

   The Keyboard section of the Control Panel appears. The pointer becomes a crosshair when you place it in the Delay Until Repeat area.



Options for delay before character repetition; the Off button turns off key repetition

Figure 8-4 The Keyboard section of the Control Panel

3. **Click the button for the repeat delay you want.**

   Clicking the Off button overrides the character-repeat feature. Your choice remains in effect until you choose a different delay option.

Adjusting sound and volume

You use the Sound section of the Control Panel to set the speaker volume and to choose the sound the Macintosh makes when it signals you.

Setting the speaker volume

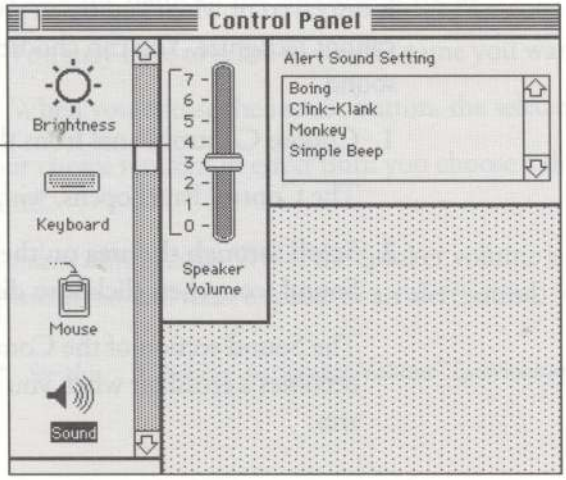
You can choose one of eight volume settings for the built-in speaker of the Macintosh Classic.

1. **Choose Control Panel from the Apple (🍎) menu.**

   The Control Panel opens, with the General section displayed.

2. **Scroll through the area on the left if necessary to locate the Sound icon, then click it to display the Sound section.**

   The Sound section of the Control Panel appears. The pointer becomes a crosshair when you place it in the Speaker Volume area.



Settings for adjusting speaker volume; when set to zero, the speaker is turned off (the menu bar flashes once as an alert)

Figure 8-5 The Sound section of the Control Panel

3. **Using the crosshair pointer, drag the bar to the number you want for the level of speaker volume.**

   When you release the mouse button, the alert sound plays at the volume level you selected.

   ❖ *Silent alert option:* When the speaker volume is set to zero, the menu bar will flash in place of an alert sound. ❖

Your choice remains in effect until you choose a different level for speaker volume.

❖ *Another place to set speaker volume:* You can also set the speaker volume in the General section of the Control Panel. ❖

➤ *See also:* • "Setting the Alert Sound" (next section)

Setting the alert sound

Many programs are designed to play a sound when an alert message is displayed or when you try to give a command that the Macintosh cannot recognize. You can choose one of several options for the alert sound.

1. **Choose Control Panel from the Apple (🍎) menu.**

   The Control Panel opens, with the General section displayed.

2. **Scroll through the area on the left if necessary to locate the Sound icon, then click it to display the Sound section.**

   The Sound section of the Control Panel appears. The pointer becomes a crosshair when you place it in the Alert Sound Setting area.

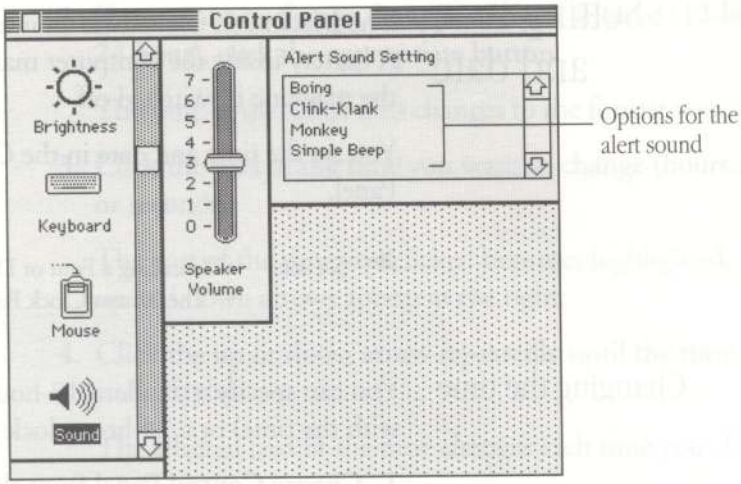


Figure 8-6 The Sound section of the Control Panel

3. **Click the name of the sound you want.**

   You may have to scroll to see the name you want.

   When you release the mouse button, the selected sound plays.

Your choice remains in effect until you choose a different alert sound.

❖ *Silent alert option:* When the speaker volume is set to zero, the menu bar will flash in place of an alert sound. ❖

➤ *See also:* • "Setting the Speaker Volume" (previous section)

Setting time and date

The Macintosh Classic has an internal clock that runs continuously. A battery inside the computer maintains the time and date when the machine is switched off.

You set the time and date in the General section of the Control Panel.

➤ *See also:*
- "Installing a Font or Desk Accessory" in this chapter
- "The System Clock Battery" in Chapter 10

Changing the time

You can specify a standard 12-hour clock (showing A.M. and P.M. with the time) or a 24-hour clock when you set the time.

1. **Choose Control Panel from the Apple (🍎) menu.**

   The Control Panel opens, with the General section displayed. The pointer changes to a crosshair when you place it in the Time area.

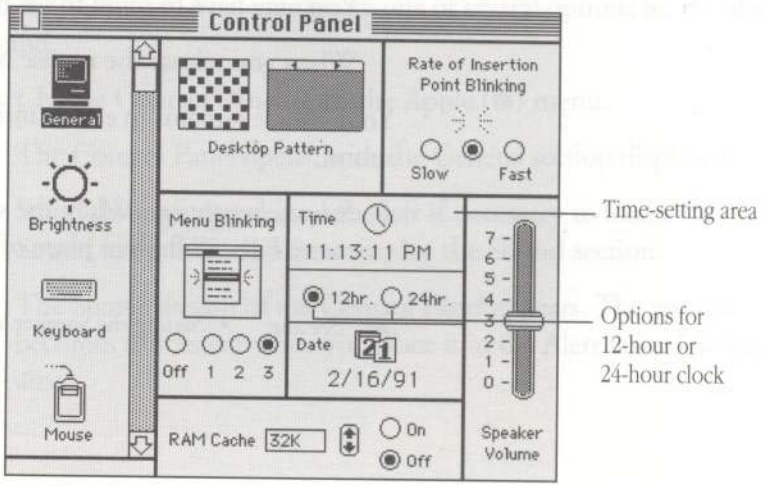


Figure 8-7 The General section of the Control Panel

2. **If you want to change the type of clock selected (12-hour or 24-hour), click the appropriate button.**

   The time in the Time area changes to the format you selected.

3. **Click the part of the time you want to change (hours, minutes, or seconds).**

   The part of the time you clicked becomes highlighted, and small up and down arrows appear at the right.

4. **Click the up or down arrow repeatedly until the time you want is displayed.**

   The selected part of the time changes each time you click.

   You can also type a new number for the selected part.

5. **Click the clock icon to save the new time.**

   The clock icon becomes highlighted briefly, then the new time is displayed.

The time you set remains in effect until you change it.

❖ *Another place to set the time:* You can also set the time, as well as an alert time, in the Alarm Clock, a desk accessory that is part of the system software supplied with the Macintosh. ❖

➤ *See also:* • "Setting an Alert Time With the Alarm Clock" in this chapter

Changing the date

You change the date in much the same way that you change the time.

1. **Choose Control Panel from the Apple (🍎) menu.**

   The Control Panel opens, with the General section displayed. The pointer changes to a crosshair when you place it in the Date area.

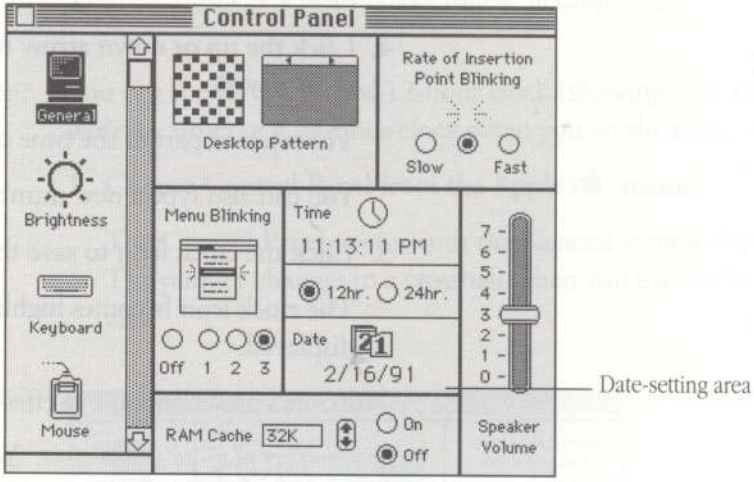


Figure 8-8 The General section of the Control Panel

2. **Click the part of the date you want to change (month, day, or year).**

   The part of the date selected becomes highlighted, and small up and down arrows appear at the right.

3. **Click the up or down arrow repeatedly until the date you want is displayed.**

   The selected part of the date changes each time you click.

   You can also type a new number for the selected part.

4. **Click the calendar icon to save the new date.**

   The calendar icon becomes highlighted briefly, then the new date takes effect.

The date you set remains in effect until you change it.

❖ *Another place to set the date:* You can also set the date in the Alarm Clock, a desk accessory that is part of the system software supplied with the Macintosh. ❖

Setting an alert time with the Alarm Clock

You can set the Alarm Clock desk accessory to alert you at a predetermined time. The Alarm Clock is part of the system software and is usually installed when you install the system software. If necessary, you can install it with the Font/DA Mover.

1. **Choose Alarm Clock from the Apple (🍎) menu.**

   The Alarm Clock appears in the upper-right area of the screen, just below the menu bar (unless you have moved it in a previous session). It displays the current time on the system clock.

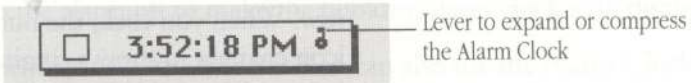


Figure 8-9 The Alarm Clock

2. **Click the upward-pointing lever to the right of the time.**

   When you click, the lever points downward and the Alarm Clock expands to its full size.

3. **If necessary, click the alarm clock icon in the lower-right area to select it.**

   The alarm clock area is highlighted when you select the icon. (Skip this step if the icon is already highlighted.) The time showing in the middle row is the last time to which the alarm was set.

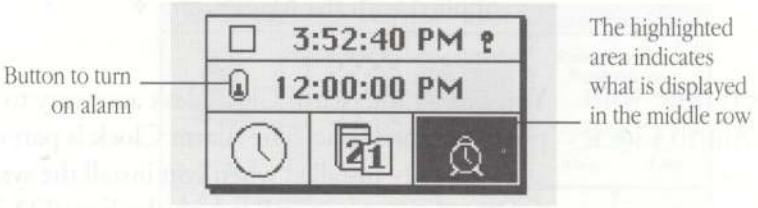


Figure 8-10 The expanded Alarm Clock with the alarm clock area highlighted

4. **Click the button to the left of the time in the middle row to turn the alarm on.**

   The pointer becomes a crosshair when you place it in the middle row. When you click, the button moves up and the alarm clock icon changes to show a ringing alarm, indicating that the alarm is turned on. (Clicking again moves the button down and turns the alarm off.)

5. **Click the part of the time you want to change.**

   The part of the time selected becomes highlighted, and small up and down arrows appear to the right of the time.

6. **Click the up or down arrow repeatedly until the time you want is displayed.**

   The selected part of the time changes each time you click.

7. **Click the lever at the right side of the top row to compress the Alarm Clock.**

   The alarm will not go off unless you click the lever to return to the compact clock, select another area of the clock, or click the close box.

8. **Click the Alarm Clock's close box.**

   When the system clock reaches the time set for the alarm, the alert sound plays once (or, if the speaker volume is set to zero, the menu bar flashes) and an alarm clock icon blinks alternately with the Apple logo at the left side of the menu bar.

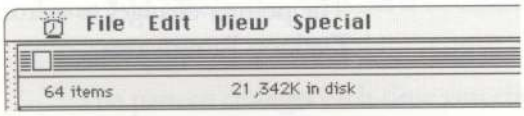


Figure 8-11 The alarm clock icon in the menu bar

After the alarm has gone off, you must open the Alarm Clock and turn the alarm off to make the blinking alarm clock icon disappear.

❖ *Setting the time and date:* You can also use the Alarm Clock to set the system clock's time and date, by first selecting the time or date icon and then changing the numbers. ❖

➤ *See also:*
- "Changing the Time" in this chapter
- "Installing a Font or Desk Accessory" in this chapter

Changing the look of the desktop

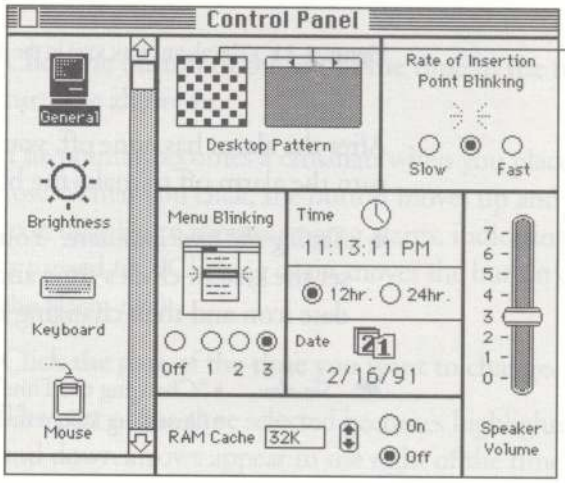
You can modify three aspects of the desktop's appearance—the desktop pattern, blinking of a chosen menu item, and blinking of the insertion point—in the General section of the Control Panel. And you can adjust the brightness of the screen in the Brightness section of the Control Panel.

Changing the pattern displayed on the desktop

You can choose from a variety of patterns provided for the Macintosh desktop, or you can create your own design by editing one of the patterns supplied.

1. **Choose Control Panel from the Apple ( ) menu.**

   The Control Panel opens, with the General section displayed. The pointer changes to a crosshair when you place it in the Desktop Pattern area.



Areas for displaying and editing available desktop patterns

Figure 8-12 The General section of the Control Panel

2. **To see the patterns available, click either small arrowhead at the top of the miniature desktop on the right side of the Desktop Pattern area.**

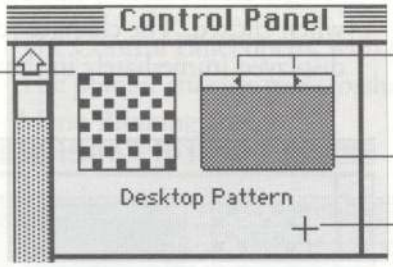


Figure 8-13 The Desktop Pattern area of the General section of the Control Panel

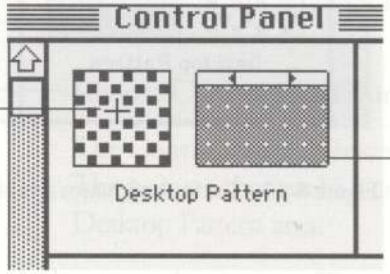
The pattern changes each time you click. Clicking the opposite arrowhead reverses the order of patterns displayed.

3. **When you see a pattern you like, click the miniature desktop to see the new pattern on your full screen.**

The new pattern replaces the current pattern for the desktop. If you decide not to keep that pattern, begin the selection process again.

4. **To edit a pattern, place the crosshair pointer in the pattern-editing area, then click where you want to make a change.**

   The small squares, representing *pixels* (the tiny dots that make up images on the screen) turn from black to white or white to black when clicked. The changes you make when editing a pattern are displayed immediately in the miniature desktop.



Crosshair pointer in the pattern-editing area

How the edited pattern looks on the desktop

Figure 8-14 Editing an existing desktop pattern

The new pattern you selected or created remains in effect until you change it.

Adjusting the blinking of a selected menu item

Menu items are preset to blink three times when you choose them. You can reduce or eliminate the blinking of a chosen menu item in the General section of the Control Panel.

1. **Choose Control Panel from the Apple (🍎) menu.**

   The Control Panel opens, with the General section displayed. The pointer changes to a crosshair when you place it in the Menu Blinking area.

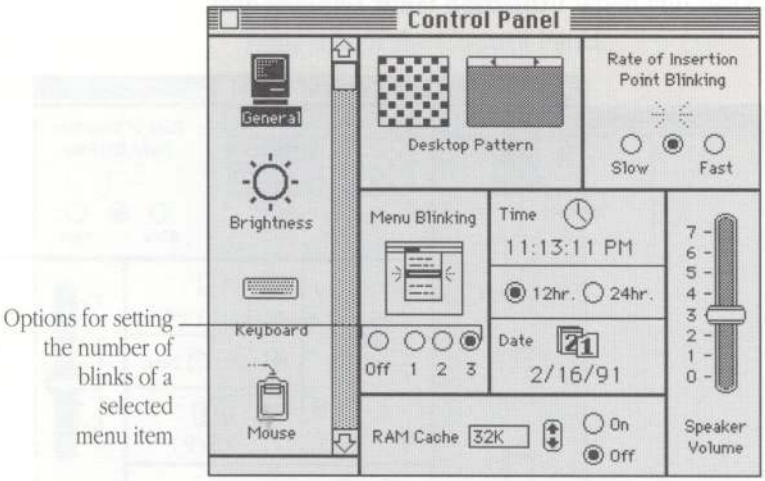


Figure 8-15 The General section of the Control Panel

2. **Click the button for the number of times you want the menu item to blink.**

   Clicking the Off button prevents a menu item from blinking.

The blinking option you selected remains in effect until you change it.

Adjusting the blinking of the insertion point

You can change the blinking rate of the *insertion point*—the vertical line in a document or an icon name that marks where your typing will be inserted. You change the blinking rate in the General section of the Control Panel.

1. **Choose Control Panel from the Apple (🍎) menu.**

   The Control Panel opens, with the General section displayed. The insertion point is blinking at the rate currently selected. The pointer changes to a crosshair when you place it in the Rate of Insertion Point Blinking area.

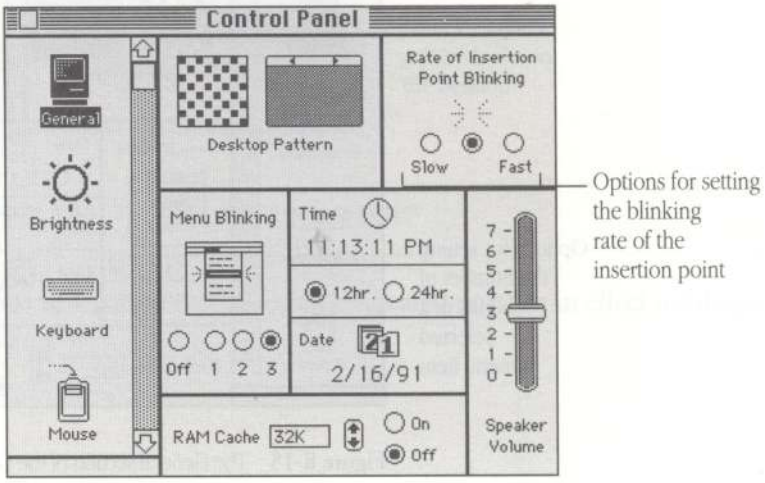


Figure 8-16 The General section of the Control Panel

2. **Click the button for the rate of blinking you want.**

   When you click, the insertion point blinks at the new rate.

Adjusting screen brightness

You adjust the brightness of the Macintosh Classic screen in the Brightness section of the Control Panel.

1. **Choose Control Panel from the Apple (🍎) menu.**

   The Control Panel opens, with the General section displayed.

2. **Scroll through the area on the left if necessary to locate the Brightness icon, then click it to display the Brightness section.**

   The Brightness section of the Control Panel appears. The pointer becomes a crosshair when you place it anywhere in the right side of the Control Panel.

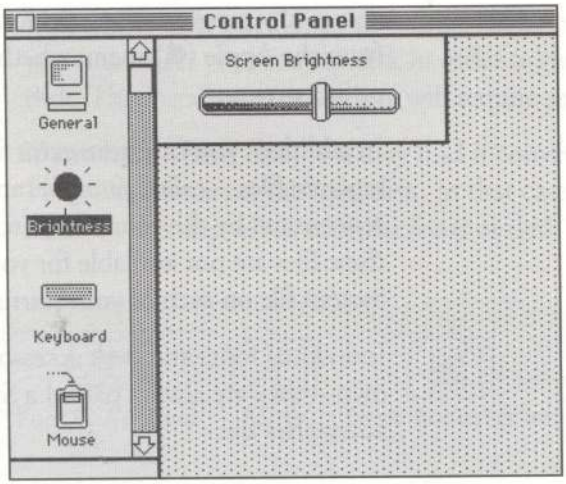


Figure 8-17 The Brightness section of the Control Panel

3. **Using the crosshair pointer, drag the bar to the brightness setting you want.**

   As you drag the bar, the screen brightness changes accordingly.

Your choice remains in effect until you choose a different brightness level.

❖ *Other ways to adjust brightness:* You can also use the arrow or the number keys to move the bar in the Screen Brightness area. ❖

Adding and removing fonts and desk

The Macintosh system software includes several desk accessories and a selection of type fonts. Independent manufacturers and user groups or computer bulletin boards provide many additional fonts and desk accessories.

When you install the system software, a core set of fonts and desk accessories is installed. You can add more desk accessories or fonts—or remove any of the ones already installed—with the Font/DA Mover, another part of the system software supplied with your Macintosh.

Fonts and desk accessories reside in the System file of a startup disk. Any font in the System file of the current startup disk is available to you in any program that uses fonts. Any desk accessory is available from the Apple (🍎) menu whether you are working on the desktop or in a program.

In addition, you can store extra fonts or desk accessories in separate files—called *fonts files* and *desk accessories files*—which are represented by the icon of a suitcase. Fonts and desk accessories in these files are not available for your use until you install them in the System file on each of your startup disks.

Individual fonts and desk accessories do not have icons of their own—they are always part of a System file or a fonts or desk accessories file.

Installing a font or desk accessory

You can easily install one or more new fonts or desk accessories in the System file of a startup disk. (If you use floppy startup disks, you may be limited somewhat by disk capacity.)

1. **Start up with the disk on which you want to install a font or desk accessory.**
2. **Insert the *Macintosh System Additions* disk (or another disk that contains the Font/DA Mover and a fonts or desk accessories file).**

   Figure 8-18 shows the icons of the Font/DA mover, a fonts file, and a desk accessories file.

   If you have only one floppy disk drive (and no hard disk drive), you must eject your startup disk in order to insert the second disk. The installation procedure will require several disk swaps.

   If you have a hard disk, you may find it convenient to store the Font/DA Mover on the hard disk. In that case, the disk you insert in this step needs only the fonts or desk accessories file.

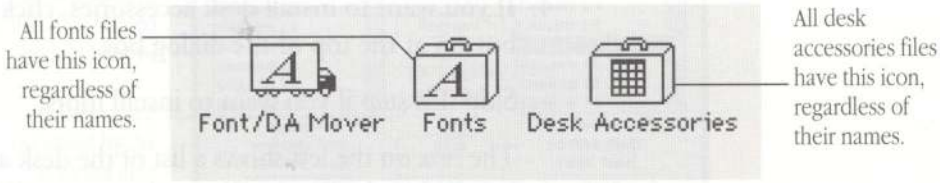


Figure 8-18 Icons of the Font/DA Mover, a fonts file, and a desk accessories file

3. **Open the Font/DA Mover by double-clicking its icon.**

   The Font/DA Mover dialog box appears, with the Font option selected. The box on the left shows a list of the fonts currently installed in the System file of the startup disk.

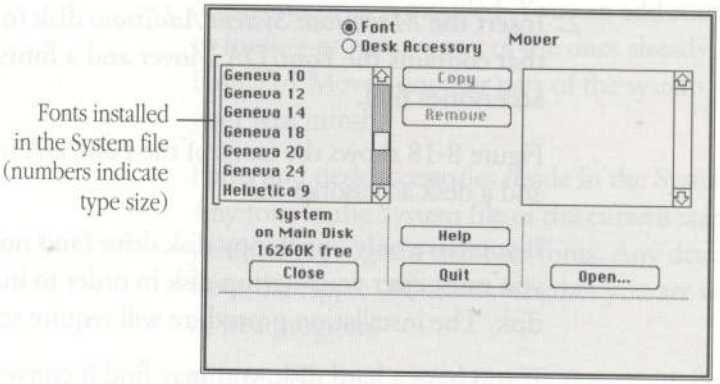


Figure 8-19 The Font/DA Mover dialog box

4. **If you want to install desk accessories, click the Desk Accessory button at the top of the dialog box.**

   Skip this step if you want to install fonts.

   The box on the left shows a list of the desk accessories currently installed in the System file on the startup disk.

5. **Click the Open button below the empty list box on the right side of the dialog box.**

   A directory dialog box appears, with which you locate and open a fonts or desk accessories file.

6. **If the fonts or desk accessories file you want is not shown in the directory dialog box, use the Drive and Open buttons as necessary to locate it.**

7. **Select the file's name, then click Open.**

   The directory dialog box disappears, and the fonts or desk accessories in the file are listed in the box at the right side of the Font/DA Mover dialog box.

8. **Select the font or desk accessory you want to install by clicking its name in the list on the right.**

   You may need to scroll through the list to see the name of the font or desk accessory you want.

   When you click the name of a font or desk accessory, small markers appear on the Copy button, showing the direction in which the selected item will move, and the amount of disk space occupied by the font or desk accessory is displayed between the two list boxes. If you selected a font, a sample of the font appears in the message area at the bottom of the dialog box.

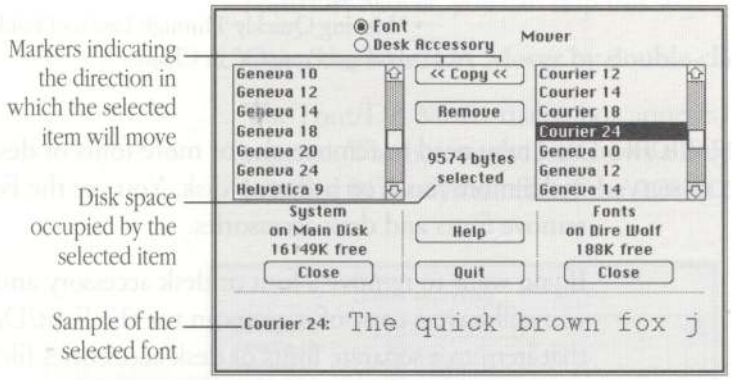


Figure 8-20 The Font/DA Mover with a font selected for copying

If you select more than one font from the list (by Shift-clicking), the combined size of your selections is displayed, but no sample appears in the message area.

9. **Click the Copy button to add the selected fonts or desk accessories to your System file.**

   When copying is completed, the names of the new fonts or desk accessories appear in the list on the left in alphabetical order.

10. **When you have finished installing fonts and desk accessories, click the Quit button at the bottom center of the Font/DA Mover dialog box.**

11. **If you are using MultiFinder, choose Restart from the Special menu.**

    By restarting, you ensure that the new fonts and desk accessories will be available. You can skip this step if you are not using MultiFinder.

See also:
- "Using a Directory Dialog Box" in Chapter 2
- "Managing Multiple Programs Using MultiFinder" in Chapter 4
- "Moving Quickly Through Levels of Folders When Using a Program" in Chapter 5

Removing a font or desk accessory

You may need to remove one or more fonts or desk accessories to make more room on a startup disk. You use the Font/DA Mover to remove fonts and desk accessories.

If you want to remove a font or desk accessory and be certain that you still have a copy of it, you can use the Font/DA Mover to copy that item to a separate fonts or desk accessories file, and then remove it from the System file.

If you are using MultiFinder, you cannot remove fonts or desk accessories from the System file of the startup disk. You must use one of these methods in order to remove fonts or desk accessories:

- Turn off MultiFinder and restart your computer before removing the font or desk accessory.
- Start up with a different disk, then use the Font/DA Mover to open the System file of the disk from which you want to remove fonts or desk accessories.

The instructions in this section assume that you have followed the first method and are not using MultiFinder.

Follow these steps to remove a font or desk accessory:

1. **Insert the *Macintosh System Additions* disk (or another disk that contains the Font/DA Mover).**

   If you are using a hard disk on which you have stored the Font/DA Mover, you can skip this step.

2. **Open the Font/DA Mover by double-clicking its icon.**

   The Font/DA Mover dialog box appears, with the Font option selected. The box on the left shows a list of the fonts currently installed in the System file of the startup disk.

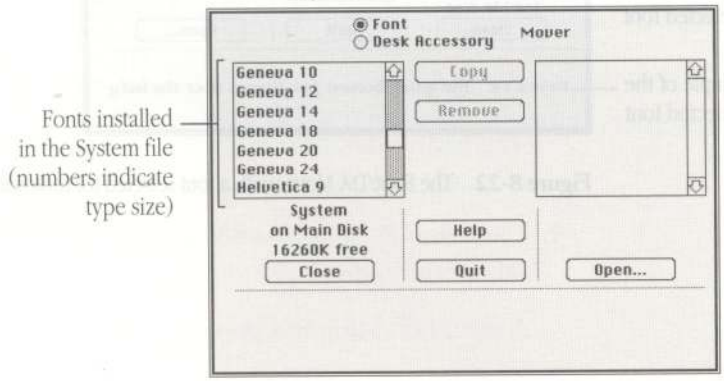


Figure 8-21 The Font/DA Mover dialog box

3. **If you want to remove desk accessories, click the Desk Accessory button at the top of the dialog box.**

   Skip this step if you want to remove fonts.

   The box on the left shows a list of the desk accessories currently installed in the System file on the startup disk.

4. **Select the font or desk accessory you want to remove by clicking its name in the list on the left.**

   You may need to scroll through the list to see the name of the font or desk accessory you want.

   When you click the name of a font or desk accessory, the amount of disk space occupied by the font or desk accessory is displayed between the two list boxes. If you selected a font, a sample of the font appears in the message area at the bottom of the window.

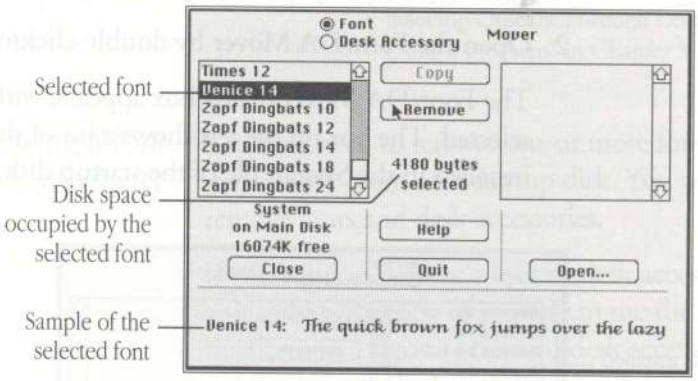


Figure 8-22 The Font/DA Mover with a font selected for removal

If you select more than one font from the list (by Shift-clicking), the combined size of your selection is displayed, but no sample appears in the message area.

5. **Click the Remove button.**

   An alert box appears, asking you to confirm or cancel the action.

6. **Click OK to remove the selected font or desk accessory.**

   Or, if you change your mind, click Cancel to stop the action.

7. **When you have finished removing fonts and desk accessories, click the Quit button at the bottom center of the Font/DA Mover dialog box.**

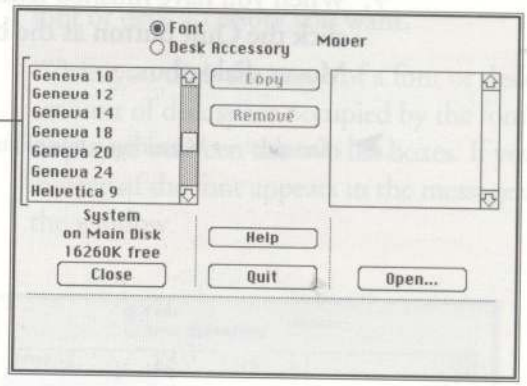
➤ *See also:* • "Creating a File of Fonts or Desk Accessories" (next section)

Creating a file of fonts or desk accessories

When you move desk accessories and fonts into and out of the System file on a startup disk, you can easily create the special types of files used to store these items. You use the Font/DA Mover to create these files.

1. **Open the Font/DA Mover by double-clicking its icon.**

   The Font/DA Mover dialog box appears, with the Font option selected. The box on the left shows a list of the fonts currently installed in the System file of the startup disk.



Fonts installed in the System file (numbers indicate type size)

Figure 8-23 The Font/DA Mover dialog box

2. **If you want to create a desk accessories file, click the Desk Accessory button.**

   Skip this step if you want to create a fonts file.

   The box on the left now shows a list of the desk accessories currently installed in the System file of the startup disk.

3. **Click the Open button below the empty list box on the right side of the dialog box.**

   A directory dialog box appears.

4. **Click the New button in the directory dialog box to create a new file.**

   Another directory dialog box appears, with a blinking insertion point where you name the new file.

5. **Type a name for the new file in the second directory dialog box.**

6. **Click Create in the second directory dialog box to create the new file.**

   The directory dialog box disappears, again revealing the Font/DA Mover dialog box. The name of the new file appears in the list on the right side of the Font/DA Mover.

7. **Select the item or items you want to move from the list on the left.**

8. **Click Copy to copy the selected items into the new fonts or desk accessories file.**

   If you do not copy at least one font or desk accessory into the new file, the file will not be saved when you finish using the Font/DA Mover.

When you have finished copying the item or items you want to store in the new file, use the Font/DA Mover to remove the ones you no longer want in the System file, and then quit the Font/DA Mover.

➤ *See also:* • "Removing a Font or Desk Accessory" (previous section)

9

Expanding Your Macintosh System

The Macintosh Classic computer is the heart of a powerful and versatile system. This system can include such external devices as disk and tape drives, printers, a scanner, a modem, a graphics tablet, and audio devices. All of these devices can be connected to the computer when it is originally set up or added later to expand its power.

The internal memory of the Macintosh Classic can be expanded from the standard amount of memory, 1 or 2 megabytes (MB), to as much as 4 MB. This additional memory must be installed by an authorized Apple dealer.

This chapter provides an overview of the components most commonly used with the Macintosh. When you are connecting a specific device to your Macintosh, be sure to follow the detailed instructions provided with the device.

Connecting SCSI devices

The Macintosh Classic has a port for connecting devices that use the *Small Computer System Interface (SCSI)*. The SCSI port permits high-speed communication between the computer and the device. (*SCSI* is usually pronounced "SKUH-zee.")

Among the SCSI devices that are commonly used with the Macintosh are hard disk drives, tape backup drives, CD-ROM (compact disc read-only memory) drives, scanners, and certain printers.

Because SCSI devices can be connected to one another, or *daisy-chained,* rather than having to be connected directly to the computer, the Macintosh can support more than one SCSI device. Up to seven SCSI devices can be linked to the Macintosh in a daisy chain.

▲ **Warning:** Always switch off the computer and all components before adding or removing any part of the system. If you add or remove a component or its cable while the equipment is on, you may damage the Macintosh, the component, or both. ▲

Setting the SCSI device number

Each SCSI device comes with a preset ID number from 0 to 7, which you can change if necessary. Apple assigns each type of SCSI device it manufactures a number at the factory; in most instances, you should not need to change the number unless two of the devices in your system have the same number.

The Macintosh uses the SCSI ID number to assign each device a priority in a chain of SCSI devices. The higher the number, the higher the device's priority; the computer itself is number 7 (so nothing else can have that number). The devices you use most often should have the highest priority numbers. (An exception to this rule is the internal hard disk, if your Macintosh Classic has one, which is set to number 0 at the factory.)

▲ **Warning:** Be sure to change the ID number of one device if you have two SCSI devices with the same ID number. You could lose information on one or both devices if you try to use two SCSI devices with the same ID number. ▲

Follow these steps to change the SCSI ID number of an Apple SCSI device:

1. **With the SCSI device switched off and unattached to the computer or other SCSI devices, locate the ID number and the ID number switch on the back panel of the device.**

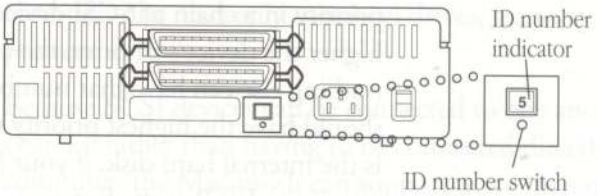


Figure 9-1 The SCSI ID number and switch

2. **Insert the point of a pushpin or an opened paper clip into the ID number switch and push gently until the number you want is showing.**

   The number increases to 7, then starts over at 0. Some devices have blank spaces between the numbers 7 and 0.

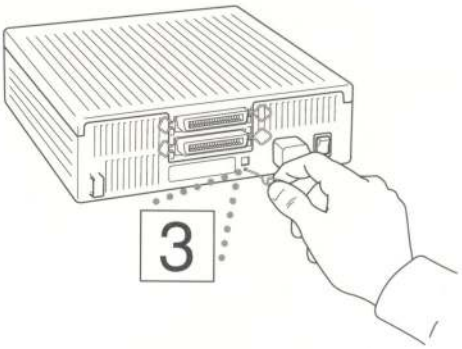


Figure 9-2 Changing the SCSI ID number

Daisy-chaining SCSI devices

SCSI devices can be linked together by cables to form a chain. The arrangement of devices in a SCSI chain does not determine their priority in communicating with the Macintosh; rather, the devices' ID numbers determine priority.

You use special cables, called *SCSI cables,* to connect SCSI devices to the computer and to one another in a chain. You attach a SCSI cable to the SCSI port on the back panel of the Macintosh and the port on the SCSI device. Each SCSI port is identified by the SCSI icon.

Figure 9-3 The SCSI icon

To assure accurate transmission of information between the computer and the SCSI devices connected to it, there must be a special connector called a *SCSI cable terminator* at each end of a SCSI chain. SCSI terminators can be internal—there's a built-in terminator in the Macintosh Classic, for example—or external.

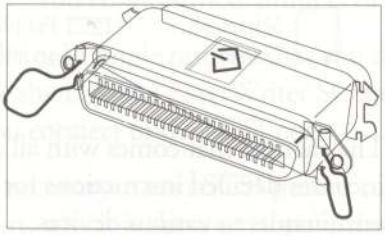


Figure 9-4 An external SCSI cable terminator

Most SCSI devices do not have built-in terminators, so you will probably need to add an external terminator to the final device in your SCSI chain. If one of your external SCSI devices has a built-in terminator, you should connect that device last in the chain.

If more than one of your external SCSI devices has a built-in terminator, you must have the terminator removed from all but one of the devices. (If you are not sure whether a SCSI device has an internal terminator, refer to the manual that comes with the device or ask your authorized Apple dealer.)

Table 9-1 shows how to arrange SCSI terminators with several different configurations of equipment.

Table 9-1 Guidelines for using terminators when connecting SCSI devices to the Macintosh Classic

If	. . . .	then add terminator to SCSI device.
If	. . . .	then no action needed.
If		then add terminator to final SCSI device in chain.
If		no action needed.
If		then have your authorized Apple dealer remove terminator from first peripheral device in chain.

Legend:

Macintosh Classic — Peripheral without an internal terminator — Peripheral with an internal terminator

The manual that comes with all Apple SCSI cables and terminators includes detailed instructions for connecting the cables and terminators to various devices.

△ **Important:** Always switch on your SCSI devices before switching on your computer. Doing so ensures that the computer will recognize all the devices in the SCSI chain. △

Connecting non-SCSI devices

The Macintosh has several ports to which you can connect other types of peripheral devices. Each port is marked by a distinctive icon on the back panel of the computer. In general, the same icon is used to mark the port on the device and the cable that connects the two.

Connecting a printer

You connect most printers to the Macintosh through the *printer port.* This port is a *serial* port—a type of port that transmits the *bits* that make up the computer's information in single file, or serially.

Printer port

Printer port icon

Figure 9-5 The printer port

Some printers, such as the LaserWriter IINT and LaserWriter IINTX, are designed for use on a network. Others, such as the ImageWriter II and ImageWriter LQ, can operate either as stand-alone printers for one Macintosh or as network devices. In either case, you connect these printers to the printer port.

The only Apple printers that you do not connect to the printer port are the Personal LaserWriter SC and the LaserWriter IISC, which you connect to the SCSI port.

If necessary, a non-SCSI printer can be connected to the modem port, which is also a serial port. You use the Chooser to select the port to which a printer is connected.

Refer to the manual that accompanies your printer for specific connection instructions.

➤ *See also:*
- "Choosing a Printer" in Chapter 6
- "Connecting a Modem" (next section)

Connecting a modem

The *modem port* on the Macintosh back panel is a serial port that is almost identical to the printer port. You use it to connect an external *modem*, a device that converts the computer's signals for transmission over telephone lines.

Modem port

Modem port icon

Figure 9-6 The modem port

This port is preferable for modem connection because the computer gives it priority over the printer port when checking for activity, which helps to assure that the modem's communications link will remain intact.

If necessary, you can connect a printer to the modem port or a modem to the printer port, however.

Refer to the manual supplied with your modem for specific connection instructions.

Connecting an external floppy disk drive

The Macintosh Classic has a *disk drive port,* to which you can attach a floppy disk drive. You can connect a SuperDrive or an 800K disk drive, but not a 400K disk drive. (You can, however, use 400K disks in a SuperDrive or an 800K drive.)

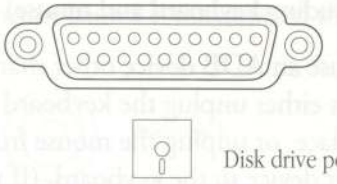


Figure 9-7 The disk drive port

Refer to the manual supplied with your floppy disk drive for specific connection instructions.

Connecting Apple Desktop Bus devices

On the Macintosh Classic, you connect the mouse and the keyboard to the Apple Desktop Bus™ (ADB) port. This port can also be used to connect a variety of input devices to your system; for example, a graphics tablet, a specialized keyboard, a trackball, a light pen, or a bar code reader.

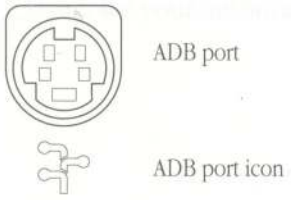


Figure 9-8 The Apple Desktop Bus port

Like the keyboard, many ADB devices have an extra ADB port that allows you to daisy-chain additional input devices. The number of devices you can connect is limited by the combined power they require and by their performance. Performance of the devices is likely to be unacceptably slow with more than three devices (including keyboard and mouse) attached to the port.

To use an ADB device other than the keyboard and mouse, you must either unplug the keyboard and connect the other device in its place, or unplug the mouse from the keyboard and connect the other device to the keyboard. (If the additional device has an extra ADB port, you can then attach the mouse to it.)

△ **Important:** Do not exceed the Apple Desktop Bus power requirements when using ADB input devices. The combined power used by all devices must not exceed 500 milliamperes (mA). Be sure to check the power required for each device you use and make certain that the total needed is less than 500 mA. △

➤ *See also:* • "Connecting the Keyboard and Mouse" in Chapter 1

Connecting audio devices

You can attach an audio output device, such as an amplifier or headphones, to the audio jack on the back of the Macintosh. The audio jack accepts a standard stereo miniplug, like that used to attach headphones to a portable stereo player. Sound output from this jack is two-channel but not stereophonic. In other words, the same sound is transmitted through both channels.

Audio jack

Audio jack icon

Figure 9-9 The audio jack

Refer to the instructions supplied with your audio output device for specific connection instructions.

You can also use the Apple Musical Instrument Digital Interface (MIDI) for transmission of digitized sound between the Macintosh and a synthesizer or other electronic musical instrument that supports MIDI. You connect the MIDI interface to the modem port. For more information on using MIDI with your Macintosh Classic, see your authorized Apple dealer.

Using your Macintosh Classic on a network

If you use your Macintosh Classic at home, you are probably using it as a *stand-alone computer*—that is, as an isolated computer system, unconnected to other computers except perhaps by a modem. But if you use your computer at work or at school, it may be part of a *network*—a group of connected, independently controlled computers.

All Macintosh computers are designed to be part of the *AppleTalk network system,* which can include other types of personal computers, such as the Apple IIe, the Apple IIGS, and the IBM PC and compatible computers. When it is part of a network, a personal computer is called a *workstation.* In addition to workstations, AppleTalk network systems can include much larger computers, called *mainframe computers.*

The AppleTalk network system can also include peripheral devices such as LaserWriter and ImageWriter printers, which can be shared by all users of the network. Network users can also share programs and exchange mail, documents, and other information by using *AppleShare file servers*—specially configured Macintosh computers that allow network users to store and share information. Finally, a network may have one or more *AppleShare print servers*—specially configured Macintosh computers that store documents waiting to be printed. (A single Macintosh can be used as both a file server and a print server.)

If your computer is part of a network, there is probably a network administrator who maintains the network. Typical duties of an administrator include making the physical connections between devices on the network, setting up and maintaining any file servers and print servers on the network, troubleshooting whenever network users encounter problems, and answering questions about network services.

The following materials provide information about using a network:

- The instructions in "Printing Documents" (Chapter 6 of this manual) apply when you are printing with a network printer.
- The documentation that comes with every LocalTalk™ cable or connector box provides guidelines and instructions for setting up a LocalTalk network and for adding devices to an existing network. (*LocalTalk* is one system of cables used in the AppleTalk network system.)
- The documentation that comes with the AppleShare File Server software explains how to set up and maintain a Macintosh computer (with one or more hard disks) as a file server, and how to use the file server from any Macintosh workstation.
- The documentation that comes with the AppleShare Print Server software explains how to set up and maintain a Macintosh computer (with one or more hard disks) as a print server, and how to print with a print server on the network.

10

Maintenance and Troubleshooting

Your Macintosh Classic computer is sturdy and requires little maintenance. But like any piece of electrical equipment, it should be handled carefully and positioned in accordance with its design and specifications.

This chapter provides some general precautions for setting up and working with the computer, as well as guidelines for maintaining a safe operating environment for the Macintosh, instructions for cleaning system components, and a note about Apple service and support.

In addition, you will find troubleshooting suggestions for times when you encounter problems or unexpected situations.

Setup and general care

Follow the suggestions in this section to ensure that your Macintosh stays in good operating condition.

All system components

When setting up and using the computer and its components, be sure to follow these precautions:

- Handle all equipment with care and always place components on a sturdy, flat surface.
- Follow the setup instructions provided with your Macintosh and its components precisely.
- Always hold a cable by the connector at one end when attaching it to or removing it from a component; do not force a connector into a socket or plug on the Macintosh or a component. If you cannot get the pieces to join easily, consult your Apple dealer or a technician for help.
- Plug the computer into a grounded outlet or power strip before connecting any components. (Doing so keeps the computer grounded.)
- Switch off the computer and all components before adding or removing any part of the system. If you add or remove a component or its cable while the equipment is on, you may damage the Macintosh, the component, or both.
- Keep food and liquids away from the immediate area of your Macintosh if possible, and be extremely careful not to spill any liquid on the computer, keyboard, mouse, or other components.
- If you do spill food or liquid onto the computer, be sure to switch it off and unplug it before attempting to deal with the situation.

▲ **Warning:** Plug the power cords for the computer and its components only into three-prong, grounded outlets. The Macintosh's grounding-type plug is a safety feature; do not defeat the purpose of this plug. If the power cord becomes frayed or damaged, disconnect it and replace it with a new one. ▲

Monitor

If you leave the computer on for extended periods, the image on the screen could "burn in" and permanently damage the screen. For that reason, it is a good idea to switch off the computer when you will not be using it for a while.

You can also use a screen-saving program to remove or vary the image on the monitor's screen when the computer is switched on but idle for an extended period of time. These programs are available from independent suppliers or user groups.

Keyboard

Take special care not to spill any liquid on the keyboard or to get greasy or sticky substances on it. If you should spill a liquid on the keyboard and it stops working, follow these procedures:

- If the liquid is thin and clear, try unplugging the keyboard, turning it upside down to let the liquid drain out, and drying it for 24 hours at room temperature. If the keyboard still does not work, take it to an authorized Apple dealer for repair.
- If the liquid is sweet or sticky, unplug the keyboard and take it to an authorized Apple dealer for repair.

Floppy disks

Figure 10-1 summarizes the correct and incorrect ways to handle floppy disks.

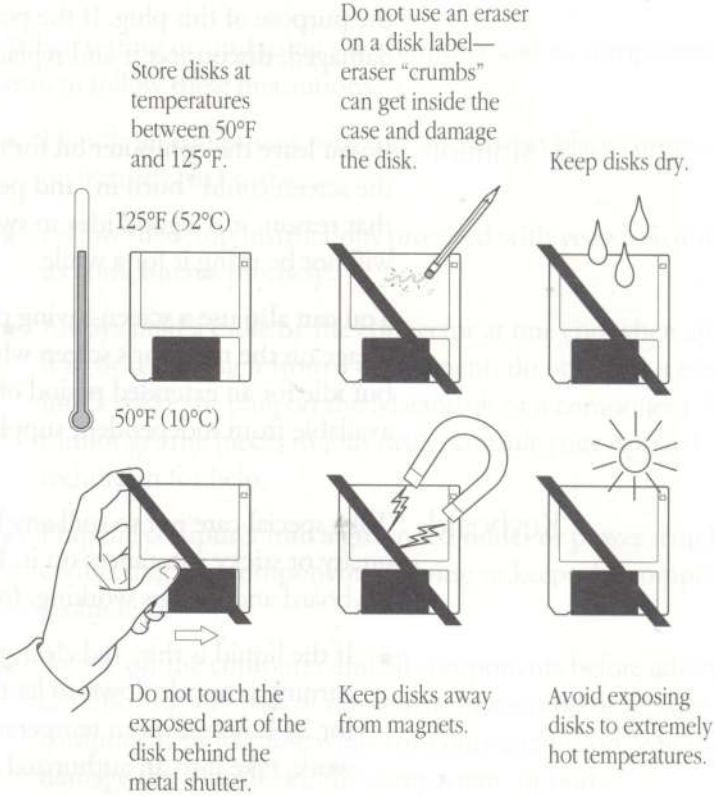


Figure 10-1 Dos and don'ts of handling floppy disks

Operating environment

The Macintosh is designed to operate reliably in a suitable environment. To maintain this environment, do the following:

- Keep the Macintosh and components out of direct sunlight and free from exposure to rain or other moisture.
- Operate the Macintosh only at temperatures between 50 degrees and 104 degrees Fahrenheit (between 10 degrees and 40 degrees Celsius), and at a humidity ranging from 20 percent to 80 percent.
- Be certain that all components are positioned so that none of their ventilation areas are blocked or partially blocked. Do not put papers, disks, or other items over the air circulation areas of the system, even temporarily. Preventing proper air circulation could result in overheating of a component and possible damage or unreliable operation.
- If your Macintosh and components are positioned so that you see interference on the monitor's screen or see or hear interference on a nearby television or radio, move the affected components farther apart.

➤ *See also:* • "Radio and television interference" on page xiv

Cleaning system components

You can clean the exterior of most Macintosh system components, the computer's screen, and the mouse's mechanical parts.

Computer and peripheral-device cases

Clean the case of your Macintosh or a peripheral device as follows:

- Use a damp, soft, lint-free cloth to clean the computer's exterior. Avoid getting moisture in any openings.
- Do not use aerosol sprays, solvents, or abrasives when cleaning the computer or other components.

Monitor

When cleaning the monitor's screen, put household glass cleaner on a soft cloth and wipe the screen. Do not spray the cleaner directly onto the screen, because the liquid may drip into the computer's interior.

Mouse

The mouse contains a small ball that rolls as you move the device. You can keep this ball free of dirt and grease by using the mouse on a clean, hard surface and cleaning it occasionally.

Follow these steps to clean the mouse:

1. **Switch off the Macintosh.**

   You should always switch off electrical equipment before disassembling any part.

2. **Turn the mouse over and open the plastic ring on the bottom that holds the ball.**

   Your Macintosh Classic computer may have one of two different types of mouse. One is opened by turning the ring counterclockwise; the other is opened by pulling the ring straight down until it snaps.

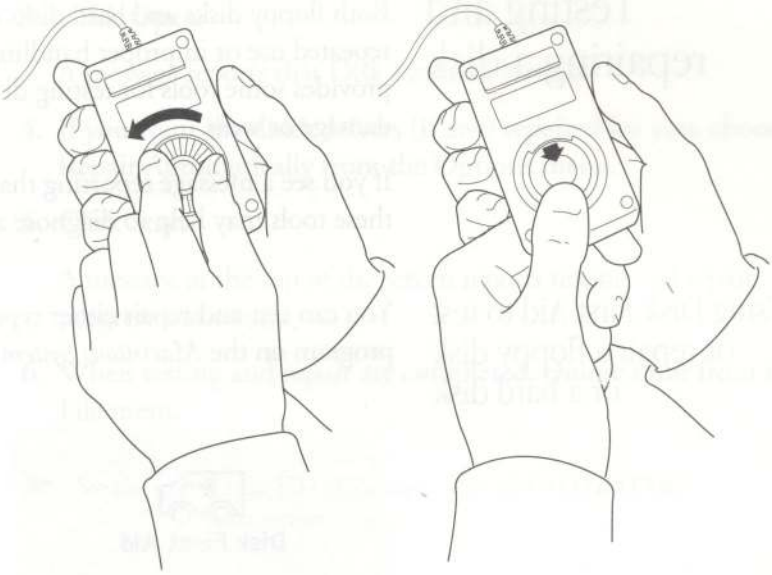


Figure 10-2 Unlocking the ring on the underside of the mouse

3. **Remove the ring and the ball beneath it.**

   You may be able to lift off the ring while holding the mouse upside down; if not, turn the mouse over while holding one hand underneath it to catch the ring and ball.

4. **Clean the three small rollers inside the mouse with a cotton swab moistened with alcohol.**

   Rotate the rollers to clean all their surfaces.

5. **Wipe the mouse ball with a clean, soft, dry cloth.**

   Do not use any liquid to clean the ball.

6. **Gently blow into the mouse case to remove any dust that has collected there.**

7. **Replace the ball and ring.**

Testing and repairing a disk

Both floppy disks and hard disks can become damaged from repeated use or improper handling. The Macintosh system software provides some tools for testing disks and repairing some types of damage or wear.

If you see a message reporting that a disk is damaged or unreadable, these tools may help to diagnose and correct the problem.

Using Disk First Aid to test or repair a floppy disk or a hard disk

You can test and repair either type of disk with the Disk First Aid™ program on the *Macintosh System Startup* disk.

Figure 10-3 The Disk First Aid icon

Follow these steps to test (and, if necessary, to repair) a disk:

1. **Start Disk First Aid by double-clicking its icon.**

   The program presents a dialog box asking you to select a disk.

2. **Select the disk you want to test and repair, using the Drive and Eject buttons as necessary.**

   You cannot repair the current startup disk; if you test the current startup disk and find that it needs repairs, you must first restart from another disk and then return to the Disk First Aid program to repair the disk.

3. **Click Open.**

   A message reports that Disk First Aid is ready.

4. **If you want the disk's defects (if any) repaired for you, choose Repair Automatically from the Options menu.**

5. **Click Start.**

   A message at the top of the screen reports testing and repair progress and results.

6. **When testing and repair are completed, choose Quit from the File menu.**

➤ *See also:* • "Using HD SC Setup to Test a SCSI Hard Disk" (next section)

Using HD SC Setup to test a SCSI hard disk

You can test a SCSI hard disk with the HD SC Setup application on the *Macintosh System Startup* disk.

1. **Start HD SC Setup by double-clicking its icon.**

   The main dialog box of the program appears.

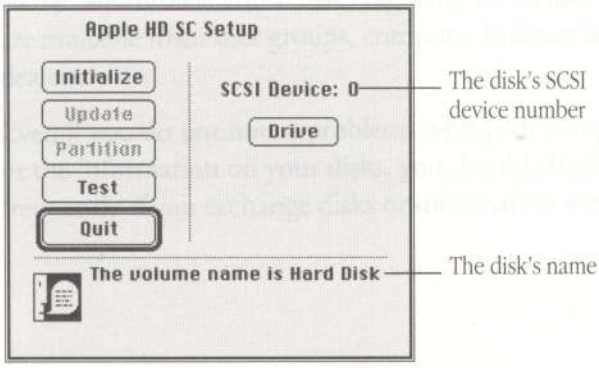


Figure 10-4 The main dialog box of the HD SC Setup program

2. **Select the hard disk you want to test, using the Drive button if necessary.**

   The disk's SCSI device number is displayed above the Drive button; the disk name (called the *volume name* on the screen) is displayed in the message box at the bottom of the screen.

3. **Click Test.**

   An alert box appears before testing begins, asking you to confirm or cancel the test.

4. **Click OK.**

   Testing begins; a spinning beach ball indicates that testing is under way.

5. **When a message informs you that testing is complete, click Quit.**

If the test reveals problems with the SCSI hard disk, try using the Disk First Aid program to repair the damage. If that does not work, consult your authorized Apple dealer.

➤ *See also:* • "Using Disk First Aid to Test or Repair a Floppy Disk or a Hard Disk" (previous section)

Changing the clock battery

The Macintosh Classic has a system clock that runs continuously. When the computer is switched off, a battery maintains the time.

The system clock battery is located inside the computer. If your system clock begins to keep inaccurate time or stops when the computer is switched off, the system clock battery may need to be replaced.

▲ **Warning:** Do not try to replace the battery yourself. Contact your authorized Apple dealer, who will replace the battery for you ▲

➤ *See also:* • "Setting Time and Date" in Chapter 8

Avoiding data loss or damage

In recent years, many computer users have experienced problems with *viruses*—malicious programs that damage files or erase disks. A virus could be introduced into your Macintosh system from a disk you or someone else puts in its drive, from a network device such as a file server, or from an electronic bulletin board service.

You can use any of several virus detection and elimination programs to check your Macintosh disks regularly for viruses. Such programs are available from user groups, computer bulletin boards, and dealers.

Even if you do not notice problems with your computer's operation or the information on your disks, you should check for viruses frequently if you exchange disks or information with other users.

A good virus prevention strategy includes these practices:

- Work with backup copies of programs so that the originals will not be corrupted by a virus.
- Back up your work frequently so that you can restore damaged data if need be.
- Check your primary disks regularly with a virus detection program and correct any problems it finds.
- Whenever you get a disk from anyone—even a commercial source—check it for viruses before using it or copying anything from it to your system.
- If your Macintosh is on a network or if you use a modem to connect with information services or bulletin boards, check for viruses as often as it is practical—ideally after each time you copy any information from an outside source.
- If you are part of a work group that includes a number of Macintosh users, set up a "virus detection station" that everyone can use to check disks (and to copy the latest version of virus detection software if your group has a site license for it).
- If you give information to other Macintosh users on disk or send information electronically, make certain that there are no viruses on your system before distributing the information.

Troubleshooting

At some time you may experience a problem with your Macintosh. The descriptions of problems and solutions in the sections that follow should help you resolve any difficulties that may arise.

Computer operation

Here are some problems you may encounter, their likely causes, and some potential solutions.

The computer is switched on but the screen is dark

Cause: The Macintosh is not getting power, or the screen brightness is turned down.

Solutions:

- If you use a screen-saving program, press a key or move the mouse to activate the screen's image.
- Check that the power cord is plugged in and firmly connected to the computer and that the electrical socket has power.
- As a last resort, try switching the computer off and then on again.

When you start up, the screen is bright but the desktop does not appear

Cause: The system software is not on the disk or the disk drive is not operating properly.

When you switch on the Macintosh and insert a disk (if your system does not have a hard disk), you should see one of the icons shown in Figure 10-5. (If you switch on the Macintosh and do not insert a disk, you will see the disk icon with the blinking question mark.)

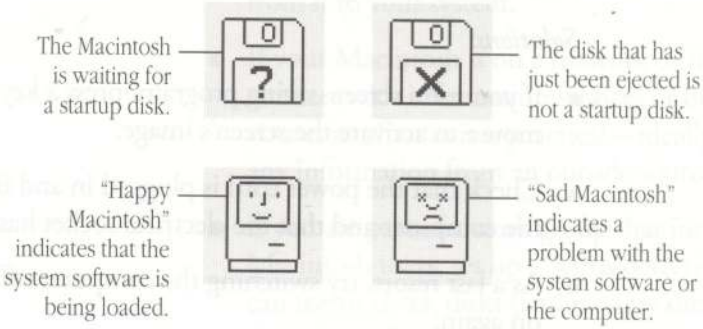


Figure 10-5 Icons the Macintosh might display at startup

Solutions:

- If you see the "happy Macintosh" icon, you do not need to do anything. The system software is being loaded.
- If you see a disk icon with a blinking question mark on it, your system is waiting for you to insert a disk.

- If you see the disk icon with an 'X' on it and the computer ejects your floppy disk, you need to insert a startup disk—one that contains an installed System Folder.
- If you see the "sad Macintosh" icon, there is a problem with the system software on the disk, or possibly with the computer.

  Eject the disk (by switching off the computer, then holding down the mouse button while you switch the computer on again). Try starting up with a different startup disk. If the "sad Macintosh" icon appears again, see your authorized Apple dealer.

The mouse moves but the pointer does not move

Cause: The mouse is not connected properly or its signals are not reaching the computer.

Solutions:

- Check the connection of the mouse cable.
- See whether the mouse needs cleaning, and if so, clean it. (See the instructions under "Cleaning System Components" in this chapter.)
- Restart the Macintosh with a different startup disk. If the pointer still does not move, consult your dealer.

Typing on the keyboard produces nothing on the screen

Cause: The keyboard is not connected properly or its signals are not reaching the computer.

Solutions:

- Check the connection of the keyboard cable at both ends.
- If the connections are secure and typing still yields no results, shut down and switch off the Macintosh, then unplug the cable from the keyboard and plug it into the keyboard's other port. (You will have to unplug the mouse to do this.) If typing still shows nothing on the screen, the problem is most likely in the keyboard itself.
- Restart the Macintosh with a different startup disk. If typing still does not produce text on the screen, consult your authorized Apple dealer.

You cannot save anything onto a floppy disk

Cause: The disk cannot accept information, it is damaged or locked, or the disk drive is not working properly.

Solutions:

- If you see a message reporting that the disk is not initialized, and you know that it has been initialized, eject the disk and carefully insert it again. If the same message appears, the disk is probably damaged. (You may be able to recover the information on it with Disk First Aid or another a disk-recovery program.)
- If you see a message that the disk is full, eject the disk and insert another that has adequate space for your document, or erase some unneeded data from the disk. If you see this message while working in a program, you can eject the disk by choosing the Save As command from the File menu and using the Drive and Eject buttons in the directory dialog box that appears.

- Check the disk for obvious damage to the plastic case or the sliding metal shutter.
- Make sure the locking tab at one corner on the back of the disk is in the unlocked position (away from the corner). See "Locking a Floppy Disk" in Chapter 7 for more information.
- Insert a different disk and try saving again. If you cannot save on the second disk, the problem may be with the disk drive.
- Before concluding that the disk drive is the problem, save your files onto a disk in a different drive, if you have one, and then restart the Macintosh. Try saving something with the suspect drive, using a disk you know is not damaged. See your authorized Apple dealer if saving fails again.

You cannot eject a floppy disk

Cause: The signal to eject the disk is not reaching the computer or the disk or drive is damaged.

Solutions (try these in the order presented here):

- Hold down the Command (⌘) and Shift keys and press the number 1 key in the top row of the keyboard to eject a disk in the internal drive; press ⌘-Shift and the number 2 to eject a disk in an external floppy drive.
- If the preceding action does not work, shut down and switch off the Macintosh, then hold down the mouse button and switch the computer on again.

- If neither of the preceding actions works, locate the small hole to the right of the disk drive's opening, and carefully insert the end of an straightened paper clip into it. Press gently until the disk is ejected, but *do not force it.* This method of ejecting a disk should be used only when the other suggested remedies do not work. If this method also fails, take the computer or disk drive to your dealer to have the disk removed.

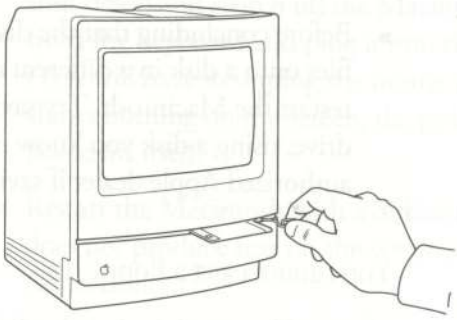


Figure 10-6 Ejecting a disk with a straightened paper clip—a last resort

You cannot start up from a hard disk or see its icon

Cause: The computer did not recognize the disk's signals or the disk drive is not working properly.

Solutions:

- If the hard disk is external, make sure that it is switched on and that its cable is connected firmly, then restart the Macintosh.
- If the hard disk is your startup disk, start up with a different disk and reinstall the system software on the hard disk.

- If the hard disk is not your startup disk and you have more than one hard disk in your Macintosh system, check the SCSI ID number of each hard disk and all other SCSI devices connected to your computer. If two devices have the same ID number, one of the devices will not be recognized by the computer. Change the duplicate number to a number not currently used. See "Setting the SCSI Device Number" in Chapter 9 for more information.

➤ *See also:* • "Testing and Repairing a Disk" in this chapter

The pointer suddenly "freezes" on the screen

Cause: Your system has a software problem.

Solutions:

- Use the power switch to switch the Macintosh off and then on again. The system may start up normally.
- If the Macintosh does not restart with the same system disk, try to start up with a different startup disk.
- If the Macintosh starts up with a different disk, check the startup disk and program you were using when the system froze. You may have been using elements of system software that were incompatible with each other or with the program you were using. Reinstalling the system software may correct the problem with the first disk.

△ **Important:** Always be sure to upgrade all parts of your system software when you install a new version of Macintosh system software, and always verify that the programs you use are compatible with the version of system software you have installed. △

A dialog box with a bomb appears

Cause: Your system has a software problem.

Solutions:

- Click the Restart button on the screen (if one is displayed as part of the message). The computer may start up normally.
- If no Restart button is displayed (or if clicking it does not work), use the power switch to switch the Macintosh off and then on again. The system may start up normally.
- If the Macintosh does not restart with the same startup disk, try to start up with a different startup disk.
- If the Macintosh starts up with a different disk, check the startup disk and program you were using when the bomb message appeared. You may have been using elements of system software that were incompatible with each other or with the program you were using. For example, if you used the newest version of the System file and the Finder with an old version of the Font/DA Mover, you could get the bomb message. Reinstalling the system software may correct the problem with the first startup disk.
- Sometimes incompatible desk accessories can cause the system to display a bomb message. Try removing any recently installed desk accessories to see if the computer works all right.

△ **Important:** Always be sure to upgrade all parts of your system software when you install a new version of Macintosh system software, and always verify that the programs you use are compatible with the version of system software you have installed. △

A rectangular box with a greater than (>) symbol appears on the screen

Cause: You inadvertently pressed the interrupt button on the programmer's switch.

Solution:

- Don't panic—you will not lose any data. Simply press the G key and then press Return. The box disappears and you can resume your work.

Printer operation

If you have a printer connected to your Macintosh, you might encounter one of the following situations.

You give the command to print a document and the printer does not respond

Cause: The command is not reaching the printer or the printer is not working properly.

Solutions:

- Check that the printer is switched on and warmed up. (If it is a LaserWriter, it should have printed a sample page.)
- Check the cable connections to the printer.
- If your printer is an ImageWriter, make sure that the Select light is on. (Press the Select button to turn the light on.)
- Check that the printer (and, if appropriate, the correct port) is selected in the Chooser. See "Choosing a Printer" in Chapter 6.
- If the Chooser does not show an icon for the type of printer you want to use, place the driver or drivers for that printer in the System Folder of your startup disk and restart the Macintosh. See "Placing Printer Drivers in the System Folder" in Chapter 6.

You print a document on a network printer and it causes the printer to restart or to display an error message on the computer's screen

Cause: The printer has received conflicting signals.

Solutions:

- Make sure that you are using the same version of the printer driver as all other people on your network. (If not, place that driver in your System Folder and restart the Macintosh.)
- If you see a message stating that the printer could not print your document, switch off the printer, then switch it on again and wait for the printer to warm up before trying to print again.

General tips

If your Macintosh or a component is not working properly but its problem is not described in this chapter, you can try some general measures that may solve the problem.

Start over

Often you can eliminate a problem simply by clearing the computer's memory and starting over.

- If possible, save any open documents in which you have made new changes before restarting the Macintosh. (If your system is frozen or you have a bomb message on the screen, saving will not be possible.)
- Choose Restart from the Special menu, if possible, or switch the Macintosh off and then on again.
- If your problem is with a peripheral device, such as a printer or an external hard disk, switch it off and then on again.

Make certain that all parts of your system software are from the same version

These practices help keep your system software in good working order:

- When you install a new version of system software, be sure to copy it onto all the startup disks you use, to avoid inadvertently working with two different system versions later.
- If the System Folder becomes damaged on one of your startup disks, either reinstall the software on that disk or copy the System Folder from a good disk onto the disk with the damaged folder.
- When you install a new version of system software, verify that the new versions of drivers for the printer and other types of devices you use are in the System Folder of your startup disks.

Make certain that your programs are in good working order

Here are tips for keeping your application programs working effectively:

- If you have problems with a program, make another working copy of that program from the original program disk.
- If making a new copy of the program does not correct the problems with it, check with the program's publisher to make sure that the version of the program you have is compatible with the version of Macintosh system software you are using. (You can often upgrade to a newer version of the program for a modest fee.)

- If you use a hard disk, be sure to keep only one System Folder and only one version of each application program on your disk.
- If you use any special programs that customize your System file (these programs are usually called *startup documents, INITs, Control Panel devices,* or *CDEVs*), always check with the sources or developers of those programs before you install them to make sure that they are compatible with the version of Macintosh system software you are using.

Create free space on the startup disk

Occasionally you may see a message reporting that the Macintosh does not have enough memory to start up.

Solutions:

- Start up with another disk, then open the startup disk that did not work and remove some items from it.
- If your Macintosh starts up from a hard disk, you can use a program that reduces the fragmentation of data on the disk. This procedure makes disk operation faster and creates larger areas of free space for startup. (You can purchase a program to reduce fragmentation from your authorized Apple dealer.)

Take your time

When you see an error message on the screen, you do not have to take an action immediately. The message will stay on the screen until you click the button that is part of it or switch off the Macintosh.

To help you diagnose and correct the problem, try to gather as much information about the situation as you can before starting over:

- Make a note of exactly what you were doing when the problem occurred. Write down the message on the screen and its ID number. (This information will help a service person diagnose the problem should you need to take the computer to your authorized Apple dealer for repair.)
- Check the screen for any clues that are visible—a menu title selected, program and document icons that are open, or anything else that seems relevant to the current situation.
- If you were writing new text, and were not able to save it before the problem occurred, you can write down the parts of the text still visible on the screen so that some of your work will be easy to replace.
- Ask other experienced Macintosh users about the problem you are having; they may have a solution for it.

Back up your programs and documents

To ensure that the information and the programs you use with your Macintosh will always be available, back up your work regularly and back up each program when you begin using it. (If you customize any features of a program, you may want to make a backup copy of the customized version as well.)

- If you use a hard disk for most of your work, be sure to make copies of all key programs and documents on floppy disks.
- To protect essential information, such as business archives and financial records, consider making duplicate backup copies on floppy disks and storing them away from your regular work place.

Service and support

To help you get the best performance from your Macintosh, Apple Computer, Inc., has established a worldwide network of authorized Apple dealers who offer full support. If you need answers to technical questions or information about product updates, your authorized Apple dealer can help you. Apple's Technical Support organization backs each dealer and international technical support group via AppleLink™, a state-of-the-art on-line electronic information service, to ensure prompt, reliable assistance.

Your dealer has the latest information on new hardware and software products as well as product updates. If you wish to upgrade your system, your dealer can help you select compatible components.

If your Macintosh or a peripheral device requires service, your local authorized Apple dealer is trained and ready to support you. Apple provides factory-quality parts and the latest available diagnostic equipment to the more than three thousand authorized Apple service centers throughout the world. Apple guarantees parts and warranty labor. (Regulations in each country determine the length of warranty. Some restrictions may apply, depending on the country of original purchase.)

If for some reason you cannot return to the authorized dealer from whom you purchased your system, go to the nearest service location. For the location nearest you, in the United States call 800/538-9696; in Canada, call 800/268-7796 or 800/268-7637. For locations in other countries, either call the Apple headquarters in your country or write to

Apple Computer, Inc.
Customer Relations
20525 Mariani Avenue
Cupertino, CA 95014
U.S.A.

or

Apple Canada, Inc.
7495 Birchmount Road
Markham, Ontario
L3R 5G2
Canada

Apple also offers service plans designed to meet your needs. One of these is the Apple*Care*® Service Agreement (available in the United States, Canada, and Australia only), which extends full warranty coverage up to three years. Your Apple*Care* contract will be honored at any participating authorized Apple dealer within the country of purchase—an added benefit if you relocate. Local service means time saved in getting your Apple system back to work.

You can purchase Apple*Care* at any time, but it is a good idea to purchase it with your system, or at least before your warranty has expired, to avoid paying for an inspection.

There are also self-service plans designed to allow large installations to repair their own equipment. Whether you use your computer at home, in the office, or at school, Apple has a low-cost service plan for you. For details, please see your authorized Apple dealer.

A

Appendixes

Macintosh Classic Keyboard and Character Sets

Along with the mouse, you use the keyboard to communicate with your Macintosh Classic computer. This appendix shows the keyboard layout and explains how to type optional characters. It also tells how to use the Key Caps desk accessory to locate the optional characters for each font installed in the System file.

Keyboard layout

Figure A-1 shows the layout of the Macintosh Classic keyboard and explains the functions of its special keys.

➤ *See also:*
- "Using Special Keys on the Keyboard" in Chapter 2
- Appendix B, "MacroMaker Command Files"
- Appendix D, "Special Aids for Using the Mouse, Keyboard, and Screen"

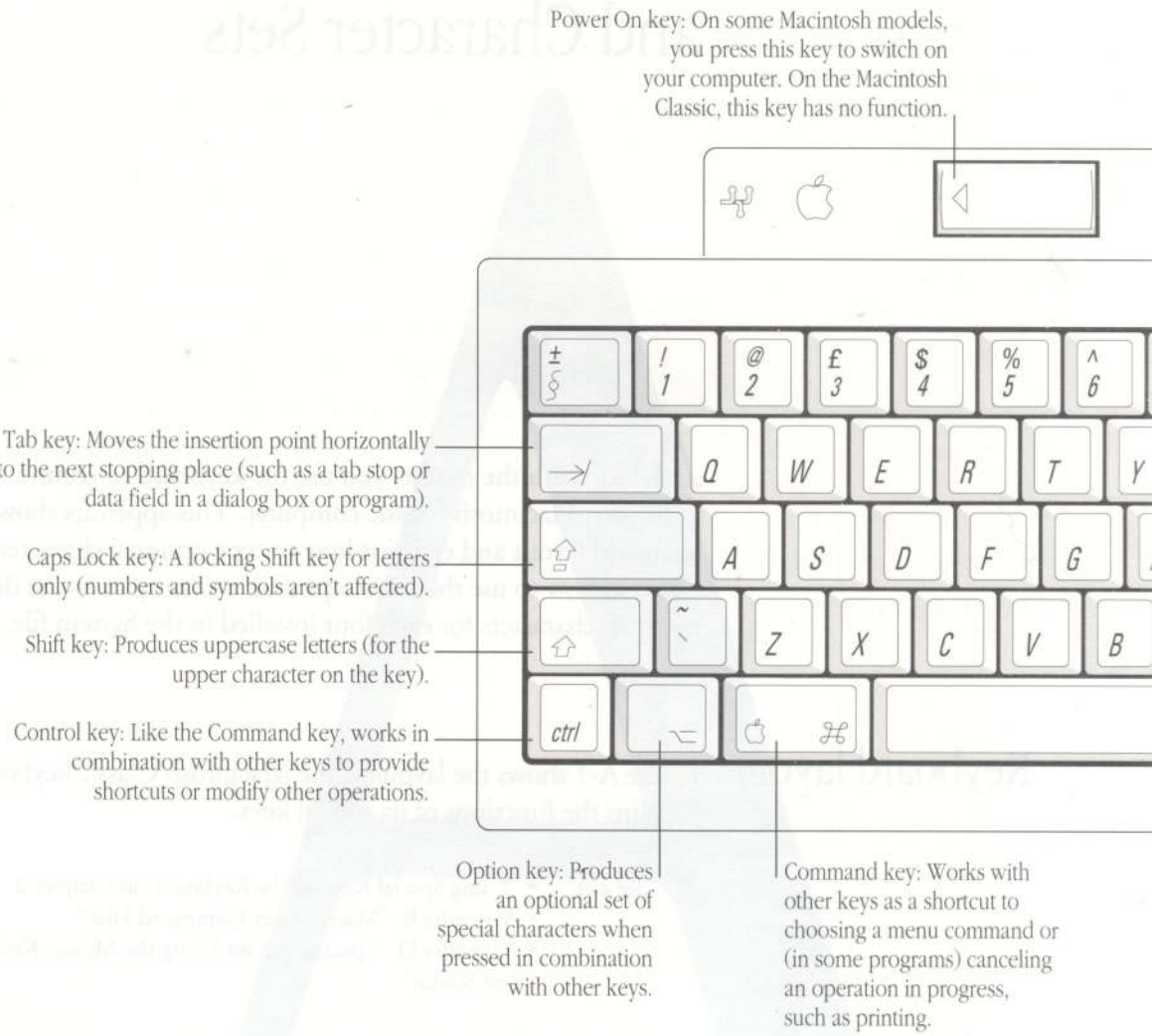
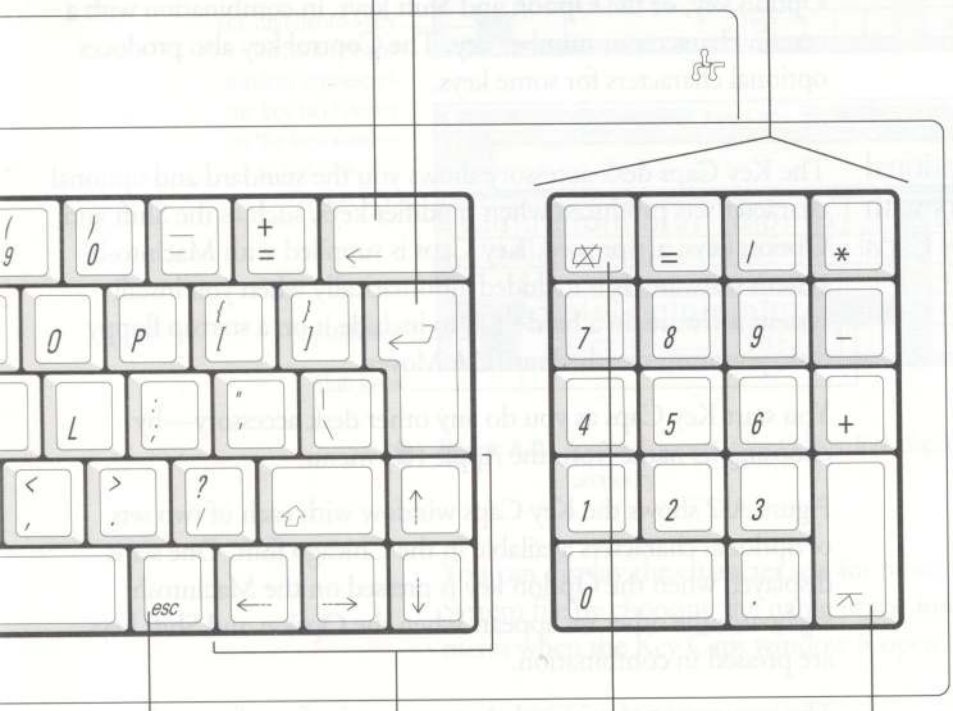


Figure A-1: The Macintosh Classic keyboard

Delete key: Deletes any text currently selected, or whatever character is to the left of the insertion point.

Return key: Ends the current paragraph and moves the insertion point to the beginning of the next line. In a dialog box, pressing Return is the same as clicking the outlined button.

Numeric keys: These keys produce numbers and mathematical symbols.



Esc key: Esc stands for Escape; the function of this key depends on the program you're using.

Arrow keys: Move the insertion point, as an alternative to using the mouse.

Clear key: Deletes the current selection, just as the Delete key does. In some programs, Clear may have other functions.

Enter key: In a dialog box, pressing Enter is the same as clicking the outlined button (or pressing Return); some programs require that you use Enter (not Return) to put data into specific fields.

Optional characters

Most Macintosh fonts have a wide variety of optional characters, such as ø and •, that are not labeled on the keyboard. You use the Key Caps desk accessory to see what optional characters are available in each font.

To use one of these optional characters in a document, you press the Option key, or the Option and Shift keys, in combination with a certain character or number key. The Control key also produces optional characters for some keys.

Viewing optional characters with Key Caps

The Key Caps desk accessory shows you the standard and optional character sets produced when modifier keys, such as the Shift and Option keys, are pressed. Key Caps is supplied with Macintosh system software. It is included automatically when you install system software on a hard disk; to include it on a startup floppy disk, you must use the Font/DA Mover.

You start Key Caps as you do any other desk accessory—by choosing its name from the Apple (🍎) menu.

Figure A-2 shows the Key Caps window with each of two sets of optional characters available in the Chicago font. One set is displayed when the Option key is pressed on the Macintosh keyboard; the other set appears when the Option and Shift keys are pressed in combination.

The assortment of optional characters varies from font to font.

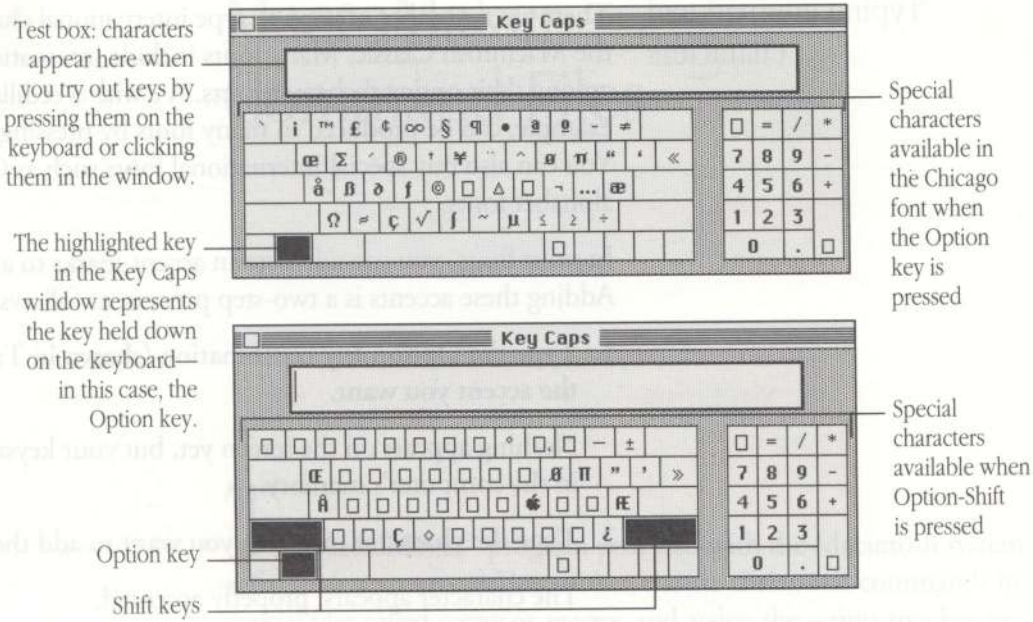


Figure A-2 Special characters in the Chicago font, displayed by the Key Caps desk accessory

You can display the character sets for other fonts installed in your System file by choosing the name of the font from the Key Caps menu when the Key Caps window is open.

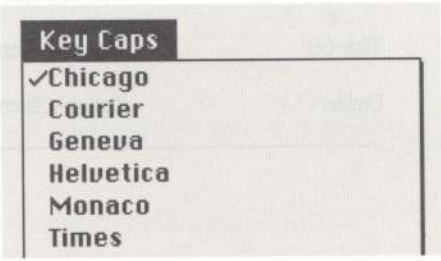


Figure A-3 The Key Caps menu (available when Key Caps is in use)

➤ *See also:* • "Installing a Font or Desk Accessory" in Chapter 8

Typing international characters

There are a number of ways to type international characters with the Macintosh Classic. Many fonts include international characters among their optional character sets. A *c* with a cedilla (ç), for example, can be produced in many fonts by pressing Option-c. You can also buy special international fonts such as Cyrillic alphabet fonts.

In most fonts, you can add certain accent marks to any letter. Adding these accents is a two-step process, as follows:

1. **Type the Option-key combination (shown in Table A-1) for the accent you want.**

   Nothing appears on the screen yet, but your keystroke is stored in the computer's memory.

2. **Type the character to which you want to add the accent.**

   The character appears, properly accented.

Table A-1 Option-key combinations for accent marks

Accent mark	Key combination
Grave accent (`)	Option-`, then type the character to be accented
Acute accent (´)	Option-e, then type the character
Circumflex (^)	Option-i, then type the character
Tilde (~)	Option-n, then type the character
Umlaut (¨)	Option-u, then type the character

MacroMaker Command Files

The MacroMaker™ program provided with the Macintosh system software lets you record keystrokes, mouse clicks, and commands in special files called *scripts* or *macros,* and assign the scripts to a key or a combination of keys on the keyboard. When you press the key or combination of keys that has a MacroMaker script, the script is "played."

Installing MacroMaker

MacroMaker is supplied in the MacroMaker Folder on the *Macintosh System Additions* disk. Figure B-1 shows the icons for the three files in that folder.

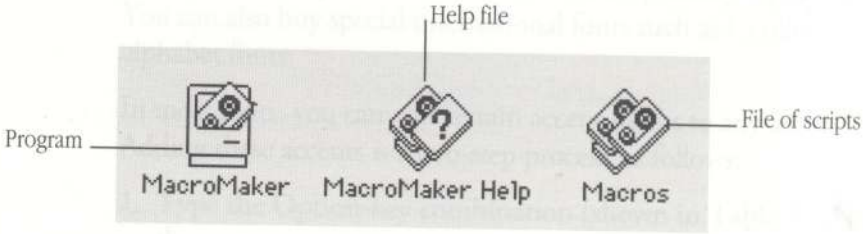


Figure B-1 Icons for the MacroMaker program, plus help and script files

Follow these steps to install MacroMaker:

1. **Drag the icons for the program, its help file, and the script file "Macros" to the System Folder of your startup disk.**
2. **Restart the Macintosh.**

Once the program is installed, a MacroMaker menu appears to the right of the other menus in the menu bar, whether you are working on the desktop or in a program. The MacroMaker menu's icon resembles an audio cassette.

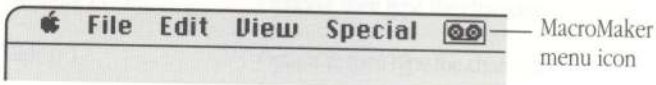


Figure B-2 The MacroMaker menu icon

You can remove MacroMaker by dragging its icons out of the System Folder of your startup disk and restarting the computer.

Creating macros with MacroMaker

You create a macro in the MacroMaker window.

❖ *Creating a global macro:* Normally, when you create a macro it applies only in the program you were using when you created it (or, if you were not using a program, it applies only in the Finder). You can create a global macro, which is available in any program, by selecting Global Macros from the pop-up menu above the macro list box on the right side of the MacroMaker window, then following the regular steps to make a macro. Because menu commands vary among programs, it is a good idea to avoid using them in a global macro unless you know that they are provided on the same menu, at the same position, in all programs. ❖

Follow these steps to create a macro:

1. **Open a new document in the program you are using.**

   If you are working on the desktop instead of in a program, you can skip this step.

2. **Choose Open MacroMaker from the MacroMaker menu.**

   The MacroMaker window appears.

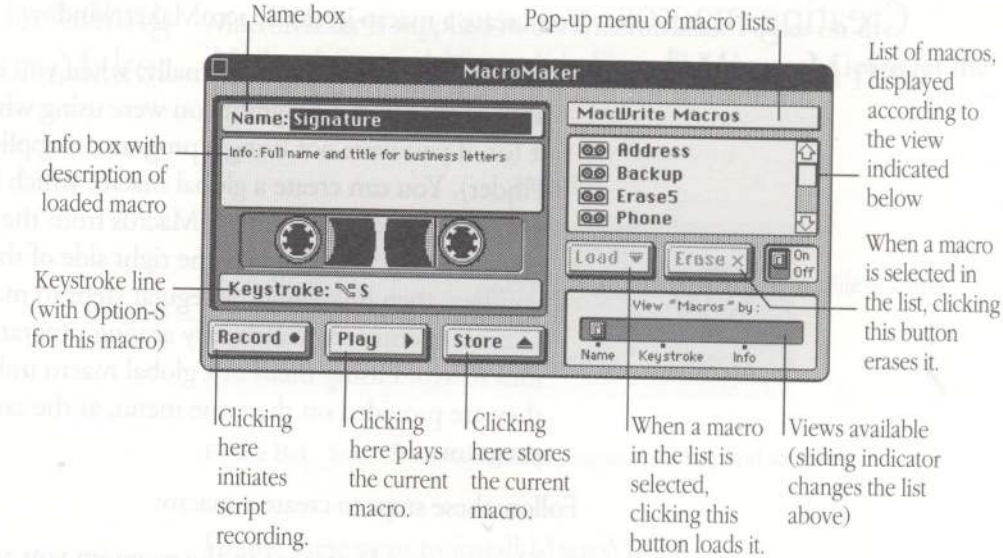


Figure B-3 The MacroMaker window

3. **Type a name for the macro in the Name box.**

   The name can be up to 16 characters long, including spaces.

4. **If you want to add a description of the macro, click to select the Info box and type the information.**

5. **Click the Keystroke line to select it, and type the keystroke or key combination that you want to trigger the macro.**

   You can include modifier keys, such as Command (⌘), Option, or Shift, in your keystroke; MacroMaker displays a symbol to represent each of these keys.

   If you wish, you can type a keystroke that is already assigned a function in the program. The macro you record for that keystroke will replace the assigned function until you delete or rename your macro.

⇪ Caps Lock
⌘ Command
⌃ Control
⌧ Numeric keypad
⌥ Option
⇧ Shift

Figure B-4 Symbols for modifier keys used in keystrokes for macros

6. **Click the Record button.**

   MacroMaker returns you to the current program. The cassette icon blinks in the menu bar to remind you that all your actions will be recorded until you stop recording.

7. **Enter the script you wish to record by typing, clicking, and choosing menu commands.**

   If you make a mistake while typing, use the Delete key to remove the incorrect characters.

8. **When you have finished recording, choose Stop Recording from the MacroMaker menu.**

   Recording stops, and the MacroMaker window appears.

9. **If you want to check your script, click the Play button.**

   MacroMaker returns you to the program in which you recorded the script, executes the script, then displays the MacroMaker window again.

10. **If you want to change the script, you can record it again without changing its name or the keystroke you type to invoke it.**

11. **Click the Store button to save the macro and move it into the macro list on the right side of the MacroMaker window.**

If the list already contains a macro with the same name or keystroke, you see a dialog box asking if you want to replace the existing macro with the new one or to cancel the store command. If you cancel, you can rename the macro or change the keystroke and then store it.

If you do not store a macro and you close the MacroMaker window, you see a message asking if you want to store the macro before closing. If you do not store it, the macro will be lost.

➤ *See also:*

- "Using Special Keys on the Keyboard" in Chapter 2
- Appendix A, "Macintosh Classic Keyboard and Character Sets"
- Appendix D, "Special Aids for Using the Mouse, Keyboard, and Screen"

Exchanging Disks and Files With MS-DOS Computers

Because the Macintosh Classic computer has a SuperDrive as its internal floppy disk drive, the computer can read and initialize 3.5-inch disks for both Macintosh computers and computers that use the MS-DOS operating system.

You use the Apple File Exchange program to initialize disks in the MS-DOS format and to convert files from MS-DOS computers for use in a Macintosh computer.

Using Apple File Exchange for MS-DOS disks and files

Apple File Exchange is supplied on the *Macintosh System Additions* disk. The program and a special *translator* file, which converts files, are stored in the Apple File Exchange Folder on this disk.

Figure C-1 The icon for the Apple File Exchange program

Initializing an MS-DOS disk in a SuperDrive

To initialize a 3.5-inch disk in MS-DOS format, follow these steps:

1. **Open the Apple File Exchange Folder on the *Macintosh System Additions* disk.**
2. **Start Apple File Exchange by double-clicking its icon.**

   The program's window appears.

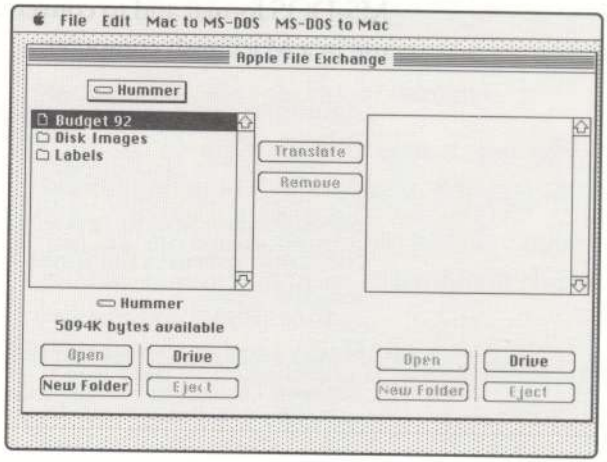


Figure C-2 The Apple File Exchange window

3. **Place a blank high-density disk in the internal floppy disk drive (or in an external SuperDrive).**

   A dialog box appears, reporting that the program cannot read the disk and asking if you want to initialize it. This dialog box shows the names of formats available in Apple File Exchange, including Macintosh and MS-DOS.

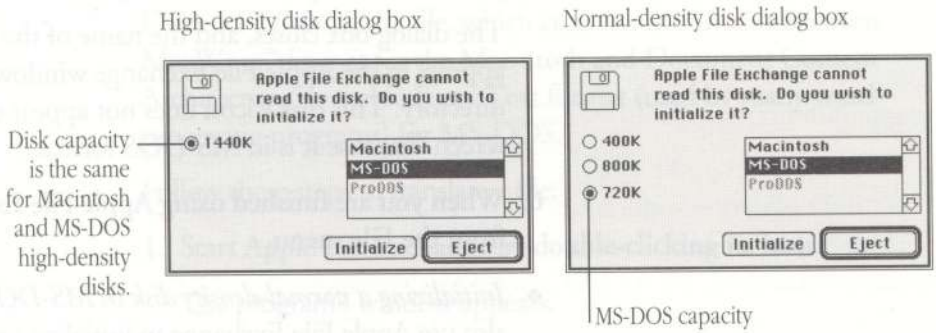


Figure C-3 Dialog boxes for initializing high-density and normal-density disks

You can initialize a disk that is not blank by inserting it, clicking the Drive button until its name appears above the right list box in the Apple File Exchange window, and choosing Erase Disk from the File menu.

4. **Click MS-DOS, then click the Initialize button.**

   The disk is initialized in MS-DOS format. When initialization is complete, a dialog box asks you to name the disk.

5. **Type a name for the disk, then click OK.**

   The name must be valid for MS-DOS—up to 11 characters, with no periods.

   The dialog box closes, and the name of the disk you initialized appears in the Apple File Exchange window, above an empty directory. This disk's icon does not appear on your Macintosh screen (because it is in MS-DOS format).

6. **When you are finished using Apple File Exchange, choose Quit from the File menu.**

❖ *Initializing a normal-density disk in MS-DOS format:* You can also use Apple File Exchange to initialize a regular double-sided (800K) 3.5-inch disk for MS-DOS files. Follow the steps above, but place the regular disk in a SuperDrive and click 720K (the MS-DOS capacity for this disk) in the dialog box that asks whether you want to initialize. (See Figure C-3.) ❖

Converting files to and from MS-DOS format

Apple File Exchange converts Macintosh files into MS-DOS format and MS-DOS files into Macintosh format. The program provides two built-in methods of translation—text translation for use with text files, and binary translation, which copies a file in binary form.

In addition, Apple File Exchange can use separate translator files designed to convert files into formats for specific programs. One translator file, provided with Apple File Exchange, is the DCA-RFT/MacWrite file, which converts documents between MacWrite™ format for the Macintosh and Document Content Architecture/Revisable Form Text format (used by many word-processing programs) for MS-DOS.

Follow these steps to translate a file:

1. **Start Apple File Exchange by double-clicking its icon.**

   The program's window appears.

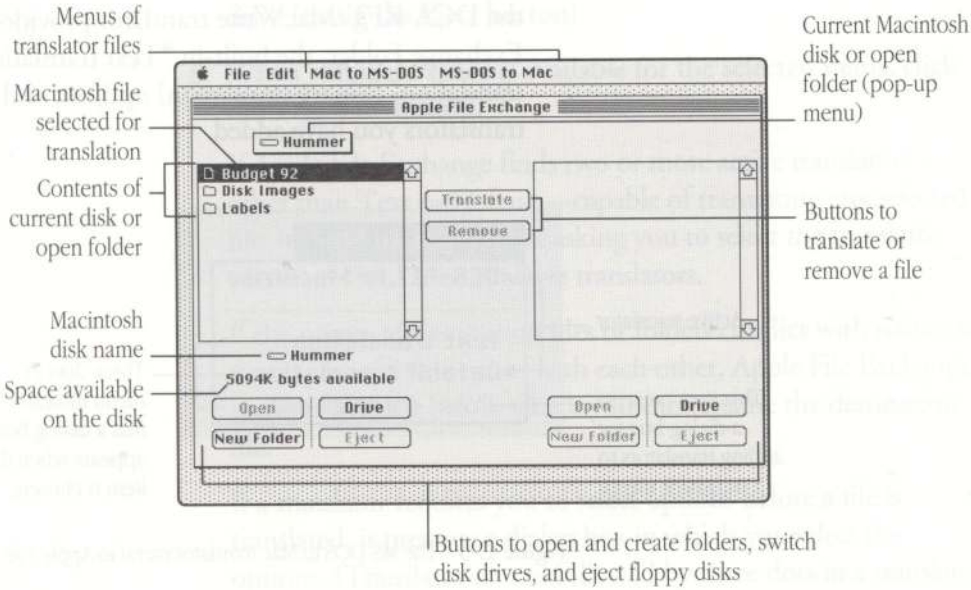


Figure C-4 The Apple File Exchange window

2. **Use the Open, Drive, and Eject buttons, if necessary, to display the files you want to translate and the destination disk or folder where you want to store the translated files.**

   In MS-DOS terminology, folders are called *directories.*

3. **Click the name or names of the files or folders you want to translate to select them.**

   To select multiple files or folders, hold down the Command (⌘) key as you click each name. You may have to scroll to locate some of the names.

4. **Open the translation menu for the kind of file translation you want by pointing to its title and holding down the mouse button.**

   If you are translating MS-DOS files into Macintosh files, for example, open the MS-DOS to Mac menu. This menu shows the DCA-RFT/MacWrite translator provided in the Apple File Exchange Folder, the built-in "Text translation" and "Default translation" (binary translation) options, and any other translators you have added.

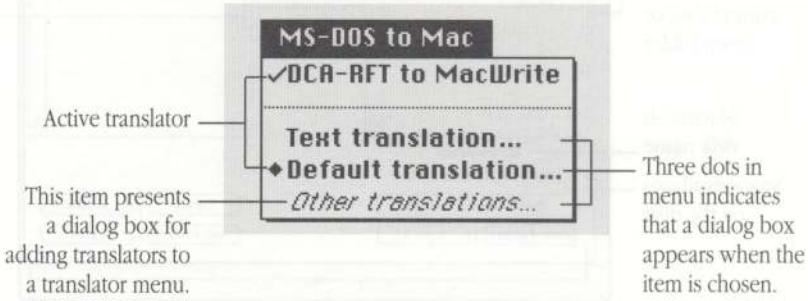


Figure C-5 The MS-DOS to Mac translator menu in Apple File Exchange

5. **If not all translators for the types of files you have selected are active, select them.**

   An active translator has a check mark beside it or, for the default translator, a diamond (indicating that it is always active).

   Selecting an active translator makes it inactive.

6. **Compare the combined size of the files or folders selected for translation with the space available on the destination disk.**

   The total space for the items selected appears between the two directory lists; the space available on the destination disk appears below the name of the destination disk.

7. **If the combined size of the selected items is greater than the space available on the destination disk, then either deselect some of the items, select some files on the destination disk and click the Remove button, or change disks in the destination drive (using the Eject button).**

8. **When sufficient space is available for the selected items, click the Translate button.**

   If Apple File Exchange finds two or more active translators—other than Text or Default—capable of translating any selected file, it presents a dialog box asking you to select the translator you want from a list of active translators.

   If the names of destination files or folders conflict with names of existing files or folders, or with each other, Apple File Exchange presents a dialog box in which you can rename the destination file.

   If a translator requires you to select options before a file is translated, it presents a dialog box in which you select the options. (Translator names followed by three dots in a translator menu present an options dialog box.)

9. **If necessary, select the appropriate translator from the list, and then either click the Continue button in the dialog box, rename the destination file and click Translate, or select the options you want and then click OK.**

   The selected files or folders are translated. A message reports the status of copying.

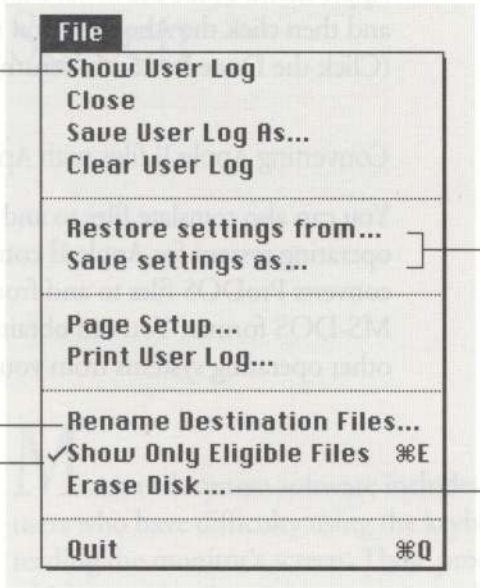
   If Macintosh files are being translated into MS-DOS files, the names of translated files are shortened to conform to the naming conventions of MS-DOS.

10. **When all translations are finished, choose Quit from the File menu.**

❖ *Converting MS-DOS files on a file server:* Some file servers can store information created by Macintosh computers and MS-DOS computers. With the AppleShare PC Card and its accompanying software, for example, MS-DOS computers can store and translate files on an AppleShare file server. ❖

Other file-conversion options

Apple File Exchange provides several other options to assist you with file conversions. Figure C-6 shows the program's File menu, where you choose these options.



The program keeps a log of all files translated; it shows the date, time, and type of conversion. The log can be saved, cleared, or printed when it's open.

You can rename destination files even if names don't conflict.

Selecting this item dims the names of files that can't be converted by the active translators.

The active translators and the options for each translator can be saved in a special file with the "Save settings as" command. You can then use them any time by choosing the "Restore settings from" command and opening the file.

The Erase Disk command lets you reinitialize a disk in any of the formats available.

Figure C-6 The File menu options in Apple File Exchange

Getting more information about Apple File Exchange options

The Apple File Exchange program contains explanations of the translators it uses. Choose About the Apple File Exchange from the Apple menu to see the list of translators, select an item in the list, and then click the About button for information about that item. (Click the Done button to return to the program's window.)

Converting Apple II files with Apple File Exchange

You can also translate files to and from the format for the ProDOS™ operating system for Apple II computers. Apple File Exchange converts ProDOS files to and from Macintosh format and MS-DOS format. You can obtain translators for ProDOS and other operating systems from your authorized Apple dealer.

Special Aids for Using the Mouse, Keyboard, and Screen

Macintosh system software includes programs designed to assist users who have difficulty using the keyboard or the mouse or reading the monitor's screen. These programs are Easy Access, which provides alternative ways to use the mouse and keyboard, and CloseView, which magnifies the images displayed on the screen.

Keyboard and mouse assistance with Easy Access

Easy Access is a file that resides in your System Folder. It provides two features—Sticky Keys and Mouse Keys. These features assist people who have difficulty typing with both hands or with manipulating the mouse. They are also useful to anyone who wants to use the keyboard with one hand or to make very fine movements of the pointer with better control.

If you have a hard disk on which you installed system software, Easy Access was included in the installation process. If you start up from floppy disks, you can install Easy Access by dragging its icon from the System Folder of the *Macintosh System Startup* disk into the System Folder of your other startup disks.

Easier keyboard use with Sticky Keys

The Sticky Keys feature of Easy Access lets you type combination keystrokes, consisting of a modifier key and another key, without actually pressing the keys simultaneously. The modifier keys covered by Sticky Keys are

- Shift key
- Command (⌘) key
- Option key
- Control key

Follow these steps to use Sticky Keys:

1. **Press the Shift key five times without moving the mouse.**

   This action turns on Sticky Keys on. (If you bump or move the mouse during this sequence, begin again.)

   When you turn Sticky Keys on, its icon appears at the far-right end of the menu bar.

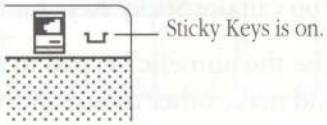


Figure D-1 The icon indicating that Sticky Keys is on

2. **Press the key combination you want to use.**

   When you press a modifier key once, the Sticky Keys icon changes to indicate that the key is set (for a single use); when you press a modifier key twice, the icon changes to indicate that the key is locked (for repeated use).

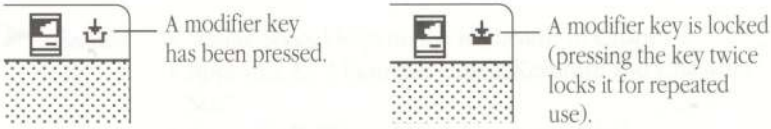


Figure D-2 Icons indicating that a modifier key has been pressed or locked

3. **To turn off Sticky Keys, press the Shift key five times again.**

   You can also turn off Sticky Keys by pressing any two modifier keys at the same time.

Easier mouse use with Mouse Keys

The Mouse Keys feature of Easy Access lets you manipulate the pointer using the numeric keypad on your keyboard instead of the mouse. You can click, drag, and perform all the other usual mouse activities, and you can gain precise control of mouse movements when needed.

Follow these steps to use Mouse Keys:

1. **Press ⌘-Shift-Clear.**

   You can use Sticky Keys for this combination if you wish.

2. **Use the numeric keypad to move the pointer and to click, drag, and make other mouse movements.**

   Figure D-3 shows the pointer movement produced by pressing keys on the numeric keypad.

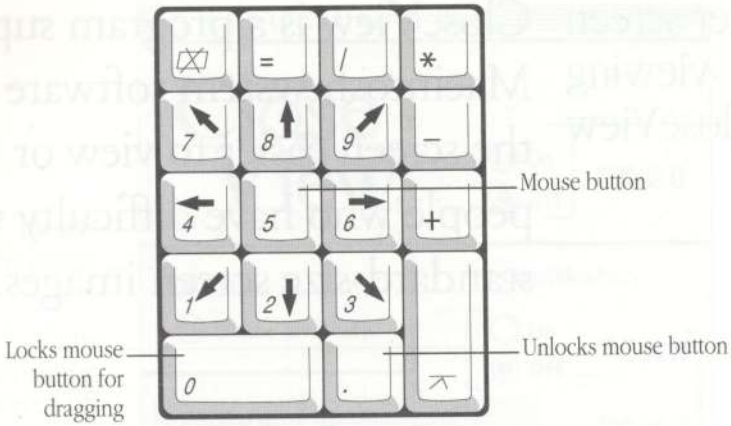


Figure D-3 Pointer movements and mouse control with Mouse Keys turned on

The 5 key serves as the mouse button: press once to click; press twice to double-click. The 0 key locks the mouse button down for dragging. The decimal point key (to the right of 0) unlocks the mouse button.

3. **To turn off Mouse Keys, press Command-Shift-Clear again.**

   You can use Sticky Keys for this combination if you wish.

➤ *See also:*
- "Using Special Keys on the Keyboard" in Chapter 2
- Appendix A, "Macintosh Classic Keyboard and Character Sets"
- Appendix B, "MacroMaker Command Files"

Easier screen viewing with CloseView

CloseView is a program supplied with Macintosh system software that makes the screen easier to view or read for people who have difficulty with standard-size screen images.

Figure D-4 The CloseView icon

You install CloseView by dragging its icon from the *System Additions* disk into the System Folder of your startup disk.

You turn on CloseView and select its features in the Control Panel. With the General section of the Control Panel open, locate and click the CloseView icon to display the CloseView section of the Control Panel. Then select the options you want to use.

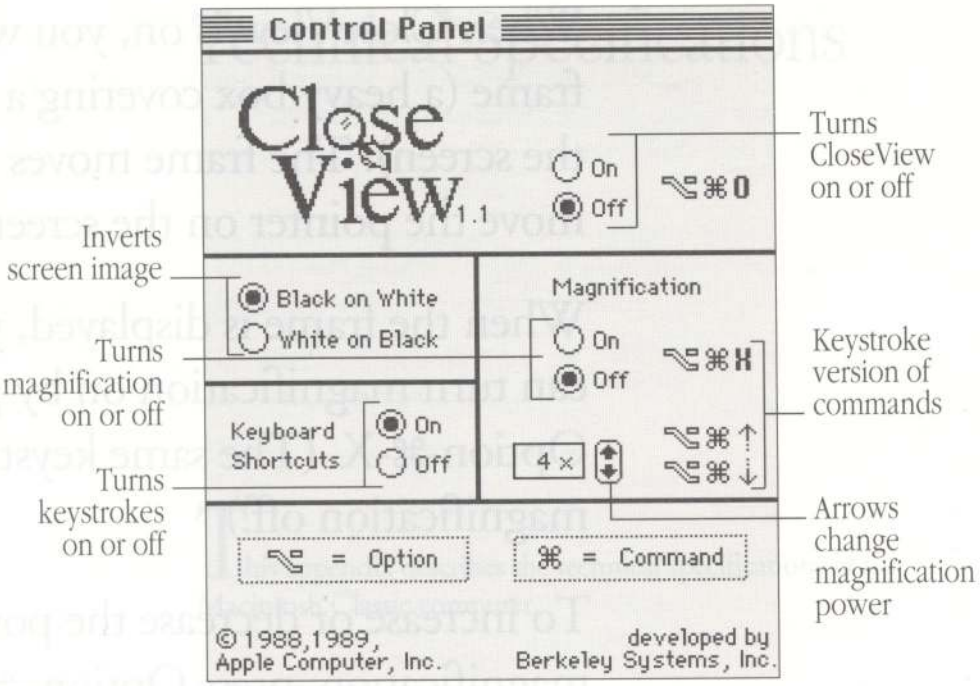


Figure D-5 The CloseView section of the Control Panel

Floppy startup disks: If you used the Installer to install system software on a floppy disk, CloseView was not installed. You can install CloseView by dragging its icon from the System Folder of the *Macintosh System Startup* disk into the System Folder of your floppy startup disk.

When CloseView is on, you will see its frame (a heavy box covering a portion of the screen). The frame moves when you move the pointer on the screen.

When the frame is displayed, you can turn magnification on by pressing Option-⌘-X. (The same keystroke turns magnification off.)

To increase or decrease the power of magnification, press Option–⌘–Up Arrow (increase) or Option–⌘–Down Arrow (decrease).

Technical Specifications

This appendix describes the technical specifications of the Macintosh Classic computer.

Main unit

Processor

- MC68000, 32-bit architecture, 7.8336 MHz clock frequency

Memory

- 1 or 2 MB of RAM, expandable to 4 MB
- 512K of ROM
- 256 bytes of user-settable parameter memory

Disk drives

- Built-in SuperDrive (1.4 MB floppy disk drive)
- Optional internal 40 MB Apple SCSI hard disk drive

Video display

- Built-in 9-in. diagonal, high-resolution 512-by-342-pixel bitmapped display

Interfaces

- Apple Desktop Bus (ADB) port for keyboard, mouse, and other devices using low-speed, synchronous serial bus
- Two RS-232/RS-422 serial ports, 230.4 Kbits/s maximum (up to 820 Kbits/s if clocked externally)
- External floppy disk interface
- SCSI interface
- Sound port for external audio amplifier

Sound generator

- 4-voice sound with 8-bit digital-analog conversion using 22 kHz sample rate

Input

- Line voltage: 220 V - 240 V AC, RMS
- Frequency: 50 - 60 Hz single phase
- Power: 100 W maximum

Clock/calendar

- CMOS custom chip with long-life lithium battery

Fan

- 10 CFM axial

Keyboard

- Apple Desktop Bus keyboard, with numeric keypad

Mouse

- ADB mouse: mechanical tracking, optical shaft or contact encoding; 3.94 ± 0.39 pulses/mm (100 ± 10 pulses/in.) of travel

Size and weight

Weight	Height	Width	Depth
Main unit			
7.3 – 7.8 kg*	336.4 mm	246.0 mm	284.9 mm
16 – 17.1 lb.*	13.2 in.	9.7 in.	11.2 in.
Mouse			
0.17 kg	27.9 mm	53.3 mm	96.5 mm
6 oz.	1.1 in.	2.1 in.	3.8 in.
Keyboard			
0.89 kb	32.5 mm	405.3 mm	150.6mm
1.96 lb.	1.3 in.	16.0 in.	5.9 in.

*Greater weight with internal hard disk

Apple Desktop Bus power requirements

- Maximum power draw for all ADB devices: 500 mA
- Mouse draws 80 mA
- Keyboard draws 25 mA

Note: The practical total of ADB devices is three daisy-chained to the port.

RAM configurations

Standard RAM is soldered to the main logic board. Additional RAM can be installed by means of a memory expansion card and then Single In-line Memory Modules (SIMMs).

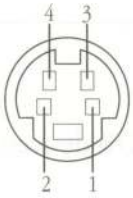
RAM chips and SIMMs must be rated at 150 ns RAM access time or faster.

▲ **Warning**: Additional memory should be installed only by an authorized Apple dealer or service provider. ▲

Pin assignments

This section presents the pin assignments and functions for all the external connectors on the back panel of the Macintosh Classic.

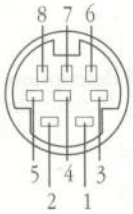
△ **Important**: The connector type listed for each port indicates the correct *plug* to use with the port illustrated. △



Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	NC	Reserved
3	+5v	+5 V DC
4	GND	Signal ground

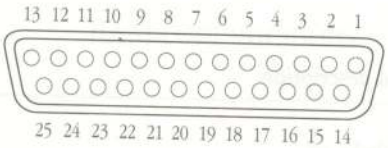
- Connector type: 4-pin minicircular
- Total length of all cables not to exceed 5 m (16 ft.)



Modem and printer ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD–	Transmit data –
4	GND	Signal ground
5	RXD–	Receive data –
6	TXD+	Transmit data +
7	NC	No connection
8	RXD+	Receive data +

- Connector type: 8-pin minicircular

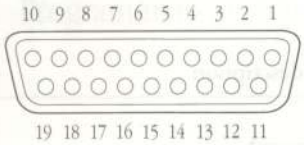


SCSI port

Pin	Signal name	Signal description
1	REQ/	Request
2	MSG/	Message
3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground
8	DB0/	Data bit 0
9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Command/Data
16	GND	Signal ground
17	ATN/	Attention
18	GND	Signal ground
19	SEL/	Select
20	DBP/	Data parity
21	DB1/	Data bit 1
22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	TPWR	Terminator power

- Connector type: DB-25
- Total length of all cables not to exceed 6 m (20 ft.)

▲ **Warning:** The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is electrically very different. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the Macintosh Classic. ▲



Disk drive port

Pin	Signal name	Signal description
1	GND	Signal ground
2	GND	Signal ground
3	GND	Signal ground
4	GND	Signal ground
5	–12v	–12 V DC
6	+5v	+5 V DC
7	+12v	+12 V DC
8	+12v	+12 V DC
9	NC	No connection
10	NC	No connection
11	PH0	Register select CA0
12	PH1	Register select CA1
13	PH2	Register select CA2
14	PH3	Register write strobe LSTRB
15	WRREQ/	Write request
16	SEL	Register select line SEL
17	ENBL/	Drive enable
18	RD	Read data
19	WR	Write data

- Connector type: DB-19

Audio jack

Pin	Signal name	Signal description
(Sleeve)	GND	Signal ground
(Middle)	AUDIO	1 V peak-to-peak audio signal
(Tip)	AUDIO	1 V peak-to-peak audio signal

- Connector type: Miniature stereo phone plug (computer's sound output is two-channel monophonic)
- The internal speaker is disabled when this port is in use.

Environment

Operating temperature

- 10°C to 40°C (50°F to 104°F)

Storage temperature

- –40°C to 47°C (–40°F to 116.6°F)

Relative humidity

- 20% to 80% (noncondensing)

Altitude

- 4722 m (15,000 ft.) maximum

Programmer's switch

The *programmer's switch* on the side of the computer is intended for use by programmers. If you are not developing programs, do not use the switch. Using it in the wrong way could cause you to lose information.

The programmer's switch has two parts: the reset button and the interrupt button. Pressing the reset button is just like switching the power switch off and back on; consequently, any work you have not saved will be lost. Press the interrupt button only if you have debugging software installed.

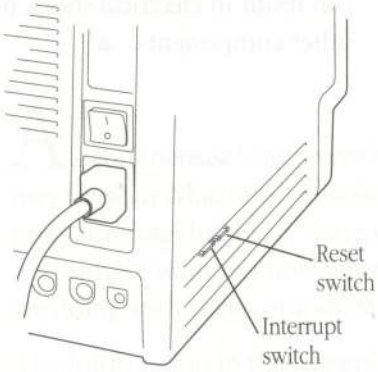


Figure E-1 The programmer's switch

➤ *See also:* • "A Rectangular Box With a Greater Than (>) Symbol Appears on the Screen" in Chapter 10

Using the Macintosh Classic overseas

Your Macintosh Classic is designed to operate at a nominal line voltage ranging from 220 V - 240 V at 50 - 60 Hz. In countries that employ a different standard (usually 100 V - 120 V at 50 Hz), you can purchase a 100 V - 120 V Macintosh Classic, or you must use a grounded, step-up isolation transformer to convert 100 V - 120 V to 220 V - 240 V. Transformers are available at most electronics stores.

▲ **Warning:** Do not use a transformer whose plug lacks a third prong for use with a grounded outlet. Use of a nongrounded transformer can result in electrical shock to you or damage to the computer or other components. ▲

Where to Get More Information About Your Macintosh Classic

As you increase your knowledge of computers and develop new uses for your Macintosh Classic, you may want to learn more about programming, hardware design, or other technical topics. Or you may simply want to know what other Macintosh users in your area are doing with their computers.

The information in this appendix provides a starting point for expanding your Macintosh knowledge and contacts, no matter what your interests.

Macintosh user groups

Whatever your level of computer experience, you can get help and support by joining a Macintosh user group. Macintosh user groups are composed of people who work with Macintosh computers and who enjoy sharing what they know with others. Activities may include new product demonstrations, question-and-answer sessions, and regular classes on using popular programs or learning to write your own. Many user groups have special beginners' meetings.

Ask your authorized Apple dealer for the name of the Macintosh user group nearest you, or call 800/538-9696 for more information. For names of user groups outside the United States, or if you are interested in starting your own user group, contact

Berkeley Macintosh Users' Group
1442-A Walnut Street, #62
Berkeley, CA 94709
U.S.A.
415/549-BMUG (415/549-2684)

or

Boston Computer Society
One Center Plaza
Boston, MA 02108
U.S.A.
617/367-8080

Technical information

A variety of technical documentation is available for the Macintosh. Apple Computer, Inc., releases technical information through three primary outlets: the Apple Technical Library and the Apple Communications Library, both published by Addison-Wesley Publishing Company, and APDA™, a support organization for programmers and developers.

Apple Technical Library

The Apple Technical Library includes comprehensive technical documentation for individual Macintosh computer models and the multiple-volume guide to the Macintosh operating system, *Inside Macintosh.*

Other books in the Apple Technical Library cover design of expansion cards and programming of device drivers for the Macintosh, programming for the Macintosh, and designing the user interface for Macintosh programs.

You will find books from the Apple Technical Library at most well-stocked bookstores.

Apple Communications Library

The Apple Communications Library offers complete technical information about Macintosh communications products and the Macintosh in a network environment. The library includes an introductory volume, *Understanding Computer Networks,* and the comprehensive guide to the AppleTalk network system, *Inside AppleTalk.*

Books from the Apple Communications Library are available at bookstores.

APDA

APDA provides a wide range of technical products and documentation, from Apple and other suppliers, for programmers and developers who work on Apple equipment. For information about APDA, contact

APDA
Apple Computer, Inc.
20525 Mariani Avenue, M/S 33-G
Cupertino, CA 95014
U.S.A.

800/282-APDA (800/282-2732)
Fax: 408/562-3971
Telex: 171576
AppleLink: APDA

Assistance for hardware and software developers

If you plan to develop hardware or software products for sale through retail channels, you can get valuable support from Apple Developer Programs. Write to

Apple Developer Programs
Apple Computer, Inc.
20525 Mariani Avenue, M/S 75-2C
Cupertino, CA 95014
U.S.A.

Glossary

A

active application The application program currently being used. With MultiFinder, a number of application programs can be open, but only one of them is the active application. The active application is represented by a small icon at the right side of the menu bar. You can switch from one application to another by clicking the icon. The active application is also indicated under the Apple (🍎) menu.

active window The frontmost window on the desktop, where the next action will take place. An active window's title bar is highlighted with parallel lines.

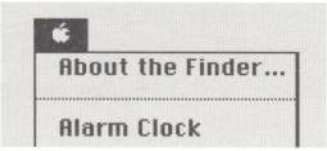
ADB See **Apple Desktop Bus.**

Alarm Clock A desk accessory that displays the current time and date, and can be set to function as an alarm.

alert box A box that appears on the screen to give a warning or to report an error message during use of an application program. Its appearance is usually accompanied by a sound.

Apple Desktop Bus (Abbreviated *ADB*) Built-in input/output circuitry of Apple computers. Apple Desktop Bus ports are on the computer's back panel and marked with a "branching" icon. You use them to attach the keyboard, mouse, and other devices, such as graphics tablets, hand controls, and specialized keyboards. See also **bus.**

Apple menu The menu farthest to the left in the menu bar, indicated by an Apple symbol, from which you choose application programs (when using MultiFinder) and desk accessories.



AppleTalk network system The connectors, cables, cable extenders, and AppleTalk software that link computers and peripheral devices—such as printers or file servers—together in a network. AppleTalk capability is built into every Macintosh and most LaserWriter models.

application program A program written for some specific purpose, such as word processing, database management, graphics, or telecommunication. Many application programs are represented by icons that show a hand working with a document. Sometimes simply called a *program.*

audio jack A socket on the back panel of the Macintosh, marked with a "sound" icon. You use the audio jack to attach headphones or other audio output devices.

B

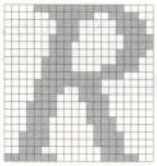
back panel The rear surface of the computer, where the power switch, power connector, and ports for peripheral devices are located.

back up To make a copy of a disk or of a file on a disk. Backing up your files and disks ensures that you won't lose information if the original is lost or damaged.

bit A contraction of *binary digit.* The smallest unit of information that a computer can hold. The value of a bit (1 or 0) represents a simple two-way choice, such as on or off, true or false, black or white, and so on.

bitmap A set of bits that represents the graphic image of an original document in memory. Used by the Macintosh to construct graphic images and typefaces.

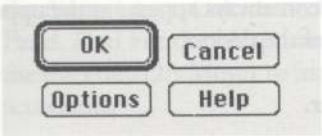
bitmapped character A character that exists in a computer file or in memory as a bitmap, is drawn as a pixel pattern on the graphics screen, and is sent to the printer as graphics data. See also **pixel**.



bitmapped font A font made up of bitmapped characters. For example, fonts stored in a Macintosh System file are bitmapped fonts.

bus Circuits inside the computer that transmit information from one part of a computer system to another; for example, the Apple Desktop Bus.

button A pushbutton-like image in dialog boxes which you click to designate, confirm, or cancel an action. Compare **mouse button.**



byte A unit of information consisting of a fixed number of bits. One byte usually consists of a series of eight bits, and represents one character (such as a letter, numeral, or punctuation mark). See also **kilobyte, megabyte.**

C

cache See **RAM cache.**

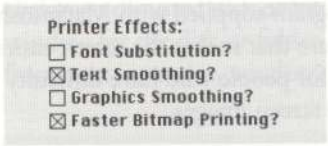
Calculator A desk accessory that works like a four-function pocket calculator. Calculation results can be cut and pasted into your documents using the Cut and Paste commands from the Edit menu.

Cancel button A button that appears in some dialog boxes. Clicking it cancels the command just chosen.

central processing unit (Abbreviated *CPU*) The "brain" of the computer; the microprocessor that performs the actual computations. See also **processor.**

character Any symbol that has a widely understood meaning and thus can convey information, such as the letters, numerals, and punctuation marks indicated on the computer's keyboard.

check box A small box associated with an option in a dialog box or window. When you click the check box, you may change the option or affect related options.



chip See **integrated circuit.**

choose To pick a command by dragging through a menu. You normally choose a command after you've selected something for the command to act on.

Chooser A desk accessory that lets you designate devices, such as printers and file servers, that your Macintosh will use.

Clear A command in the Edit menu that removes selected material without placing it on the Clipboard. You can use the Undo command immediately after using Clear if you change your mind. Compare **Cut.**

click To position the pointer on something, and then to press and quickly release the mouse button. Clicking is normally used to select an icon, a word or object in a document, a choice in a window, or to confirm a choice in a dialog box.

Clipboard An area in the computer's memory that functions as a holding place for what you last cut or copied. Information on the Clipboard can be pasted into documents.

close box The small white box on the left side of an active window's title bar. Clicking it closes the window.

CloseView A program supplied with Macintosh system software that makes the screen easier to view or read for people who have difficulty with standard-size screen images.

command An instruction that causes the computer to perform some action. The most common form of Macintosh commands are the commands listed in a menu. These are chosen by using the mouse and pointer. Others can be typed from a keyboard.

configuration (1) A general-purpose computer term that can refer to the way you have your computer set up. (2) The combined hardware components—computer, monitor(s), keyboard, and peripheral devices—that make up a computer system. (3) The software settings that allow various hardware components of a computer system to communicate with each other.

Control Panel A desk accessory that lets you change various Macintosh features, such as speaker volume and keyboard repeat speed and delay.

Copy A command in the Edit menu that copies selected material and places it on the Clipboard, without removing the material from the original document. See also **Clipboard.**

CPU See **central processing unit.**

current application See **active application.**

current startup disk The disk that contains the System file the computer is currently using. The startup disk icon always appears in the upper-right corner of the desktop.

cursor See **pointer.**

Cut A command in the Edit menu that removes selected material and places it on the Clipboard; from there you can paste it elsewhere. Compare **Clear;** see also **Clipboard.**

cut and paste To move something from one place in a document to another in the same document or a different one. It's the computer equivalent of using scissors to clip something and glue to paste the clipping somewhere else.

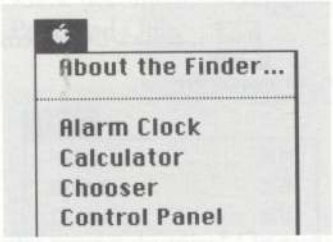
D

data disk A disk that contains your work—letters, budgets, pictures, and so on—in the form of documents.

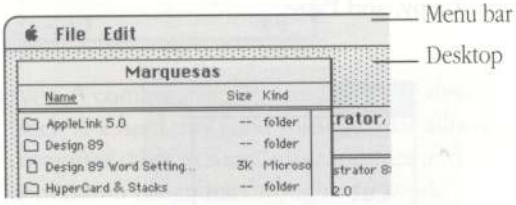
default A value, action, or setting that a computer system assumes, unless you give it a different instruction.

deselect To change a selected item, such as an icon, so that it is no longer selected. On the desktop, you deselect highlighted icons by pressing the Shift key and clicking the icon you want to deselect, or by selecting something else without pressing the Shift key.

desk accessories "Mini-application programs" that are available from the Apple menu at all times, regardless of the program you're using. Desk accessories provided with the Macintosh include the Alarm Clock, Calculator, Chooser, Control Panel, Find File, Key Caps, and Scrapbook. You use the Font/DA Mover to install desk accessories.



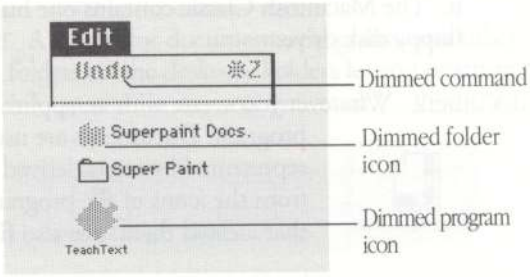
desktop Your working environment on the computer—the menu bar and the background area on the screen. You can have a number of windows open on the desktop at the same time.



destination The disk or folder that receives a copied or translated file, as in *destination disk.*

dialog box A box that contains a message, often requesting more information from you. Sometimes the message is accompanied by a sound.

dimmed A term used to describe words or icons that appear in gray. For example, menu commands appear dimmed when they are unavailable. A dimmed icon represents an opened disk or folder, or a disk that has been ejected. Double-clicking a dimmed disk or folder icon causes the window for the disk or folder to become the frontmost, or active, window.



directory A list of the contents of a folder or a disk. By using commands from the View menu, you can set a directory window to present this list pictorially, alphabetically, chronologically, or according to size.

directory dialog box A type of dialog box you use to locate files and change disks from within an application program. Directory dialog boxes appear whenever you choose the Open or Save As commands from within an application program.

disk A flat, circular, magnetic surface on which information can be recorded in the form of small magnetized spots, in a manner similar to the way sounds are recorded on tape. See **floppy disk, hard disk drive.**

disk capacity The maximum amount of data a disk can hold, usually measured in kilobytes (K) or megabytes (MB). For instance, Apple 3.5-inch disks typically have a disk capacity of 400K, 800K, or 1.4 MB. Hard disks can hold 20 MB to 160 MB or more.

disk drive The device that holds a disk, retrieves information from it, and saves information on it. The Macintosh Classic contains one built-in floppy disk drive.

document Whatever you create with an application program. Documents are usually represented by icons derived from the icons of the programs that created them. See also **file**.

double-click To position the pointer on an object, such as an icon, and then press and release the mouse button twice in quick succession without moving the mouse. Double-clicking an icon opens the document, application program, or disk that the icon represents.

drag To position the pointer on something, press and hold the mouse button, move the mouse, and release the mouse button. When you release the mouse button, you either confirm a selection or move an object to a new location.

driver A system program that allows the microprocessor to direct the operation of a peripheral device, such as a printer or scanner. (Also called a *resource*.) Drivers are represented by icons; to begin using drivers with the devices connected to your Macintosh, you usually drag their icons to your System Folder and restart the computer.

E

Easy Access A feature of Macintosh system software that assists people who have difficulty typing on the keyboard or manipulating the mouse.

Edit menu A menu that is available in most programs and lists editing commands—such as Cut, Copy, and Paste.

eject To remove a disk from a disk drive.

error message A displayed message that tells you of an error or problem in the execution of a program or in your communication with the computer system. An error message is often shown in an alert box and accompanied by a sound.

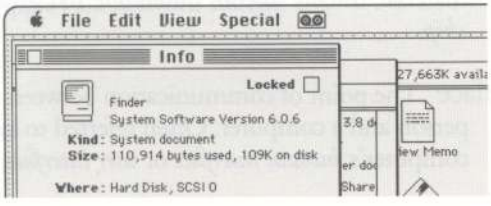
F

file Any named, ordered collection of information stored on a disk. Application programs and documents are examples of files. You make a file when you create text or graphics, give the material a name, and save it on a disk.

File menu A menu that lists commands that affect whole documents—commands such as Save, Print, and Quit.

file server A combination of a mass-storage device (such as a hard disk) and software that allows computer users to share common files and application programs through a network.

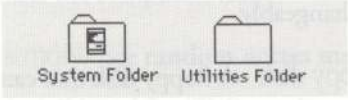
Finder A part of Macintosh system software that's always available, creating the desktop environment. You use the Finder to manage documents and application programs, and to get information to and from disks.



Find File A desk accessory that enables you to find any folder or file on a disk.

floppy disk A disk made of flexible plastic that stores computer data. The 3.5-inch disks used in Macintosh disk drives are floppy disks housed in rigid, plastic containers for support and protection.

folder A holder for documents, programs, and other folders on the desktop. Folders let you organize information in any way you want.



font A collection of letters, numbers, punctuation marks, and other typographical symbols with a consistent appearance; the size and style can be changed readily. See also **printer fonts, screen fonts.**

This is New York font.

This is Geneva font.

Font/DA Mover A utility program, supplied with Macintosh system software, that lets you add or remove fonts and desk accessories from a disk's System file.

format See **initialize.**

G

graphics tablet A device for drawing pictures. A special pen sends out signals that are detected by wires in the tablet and sent as x and y coordinates to the screen.

H

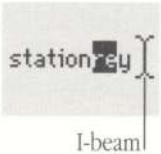
hard disk drive A disk drive in which one or more metal disks are permanently sealed. A hard disk drive stores very large amounts of information and operates much faster than a floppy disk. The terms *hard disk* and *hard disk drive* are often used interchangeably.

high-density floppy disk A floppy disk that can store up to 1.4 megabytes (MB) of data. High-density floppy disks can be used only in SuperDrive disk drives.

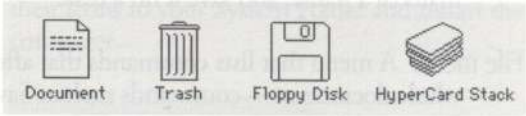
highlighted Visually distinct. For example, when you select an icon it becomes highlighted—the outline and icon name are white on a black background rather than the usual black-on-white.

I, J

I-beam A type of pointer shaped like the capital letter 'I' and used for entering and editing text. See also **insertion point.**



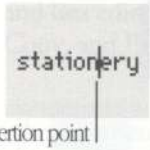
icon An image that represents an object, a concept, or a message. For example, an unopened HyperCard stack's icon looks like a stack of cards; a floppy disk's icon is a miniature of that type of disk.



initialize To prepare a blank disk to receive information by organizing its surface into tracks and sectors; same as *format.*

input Information transferred into a computer from some external source, such as the keyboard, the mouse, a disk drive, or a modem. Compare **output.**

insertion point The place in a document where something will be added; it is placed by clicking at the spot where you want to make the change and is represented by a blinking vertical bar.



Installer A program that lets you install or update your system software or add resources.

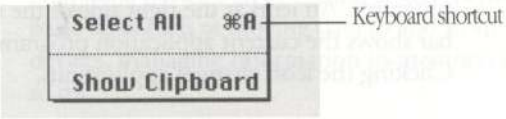
integrated circuit An electronic circuit entirely contained in a single piece of semiconducting material, usually silicon. Often referred to as a *chip.*

interface The point of communication between a person and a computer. Often referred to as the computer's *human interface* or *user interface.*

K

K See **kilobyte.**

keyboard shortcut A combination of key presses that you can use instead of a mouse action to perform a task. Keyboard shortcuts almost always include the Command (⌘) key, and are convenient alternatives to using the mouse to choose menu commands.



Key

Caps A desk accessory that shows you the optional character set available for a given font family.

kilobyte (Abbreviated *K*) A unit of measurement consisting of 1024 bytes. See also **byte, megabyte.**

L

light pen A peripheral device shaped like a pen that sends instructions to the computer when you point at choices on the screen. Light pens work only with application programs designed to receive input from them.

LocalTalk cable system A system of cables, cable extenders, and connector boxes that connect computers and network devices as part of the AppleTalk network system.

lock To prevent files or disks from being altered. Individual files are locked with software commands. A disk can be physically locked by sliding the small tab on the back of the plastic case of a 3.5-inch disk toward the corner of the disk. See also **unlock.**

M

main logic board A large circuit board that holds RAM, ROM, the microprocessor, custom-integrated circuits, and other components that make the computer work.

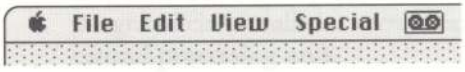
main memory See **random-access memory.**

megabyte (Abbreviated *MB*) A unit of measurement equal to 1024 kilobytes, or 1,048,576 bytes. See also **byte, kilobyte.**

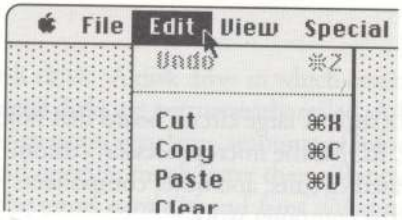
memory A hardware component of a computer system that can store information for later retrieval. See **random-access memory, read-only memory.**

menu A list of actions from which you can choose. Menus commonly appear when you point to and press menu titles in the menu bar or in a dialog box. You choose a command by dragging through the menu and releasing the mouse button when the command you want becomes highlighted.

menu bar The white strip across the top of your screen that contains the titles of the menus available to you.



menu title A word, phrase, or icon that is in the menu bar and that designates one menu. Positioning the pointer on a menu title and holding down the mouse button causes the title to be selected and its menu to appear below it. You then drag to choose a command.



modem Short for *modulator/demodulator.* A device that links your computer to other computers and information services over telephone lines.

modem port A connector on the computer's back panel marked by a telephone icon. A port that you can use to attach a modem to the computer.

monitor See **video monitor.**

mouse A small device that controls a pointer on the screen. When you move the mouse on a flat surface, the pointer moves.

mouse button The mechanical button on top of the mouse. In general, pressing the mouse button initiates some action on whatever is under the pointer on the screen, and releasing the button confirms the action.

Mouse Keys An Easy Access feature that lets you use keys on the numeric keypad to move the pointer.

MS-DOS An acronym for Microsoft Disk Operating System. This is the operating system for personal computers manufactured by many companies.

MultiFinder A part of Macintosh system software that allows the computer to use multiple programs simultaneously by alternating between programs. An icon at the right side of the menu bar shows the current application program. Clicking the icon changes applications.

N

network A collection of interconnected, individually controlled computers, together with the hardware and software used to connect them. A network lets users share data and peripheral devices such as printers and file servers, exchange electronic mail, and so on.

numeric keypad A calculator-style keypad, to the right of the main keyboard, that you can use to type numbers. The layout of numbers on the keypad makes it easier and faster to use than the the number keys on the regular keyboard. Some programs designate the keys on the numeric keypad as special function keys.

O

open To make available. You open files in order to work with them. Opening an icon causes a window to come into view, revealing the document or application program the icon represents. You may then perform further actions on the contents of the window.

operating system A program that organizes the internal activities of the computer and its peripheral devices; an operating system performs basic tasks such as moving data to and from devices, managing information in memory, and so on.

output Information transferred from the computer's microprocessor to some external device, such as the display screen, a disk drive, a printer, or a modem. Compare **input.**

P, Q

password A secret word that gives you, but no one else, access to your data or to messages sent to you through electronic mail or an information service.

Paste A command in the Edit menu that puts the contents of the Clipboard—whatever was last cut or copied—at the insertion point. See also **Clipboard.**

peripheral device A piece of hardware—such as a video monitor, disk drive, printer, or modem—used with a computer and under the computer's control. Peripheral devices are often (but not always) physically separate from the computer and connected to it by cables.

pixel Short for *picture element.* The visual representation of a bit on the screen (white if the bit is 0, black if it's 1). Also a location in video memory that corresponds to a point on the screen. See also **bit.**

pointer An arrow or other symbol on the screen that moves as you move the mouse. You use the pointer to choose commands, move data, and draw in graphics programs.

pop-up menu A menu of options (for example, in a directory dialog box) in which only the selected option is visible unless you press to make the other options "pop up."

port A socket on a computer or peripheral into which you can plug a cable to connect another device.

printer fonts Fonts used by LaserWriter and other laser printers to print text at higher resolution than appears on the screen. Some printer fonts are resident in the printer's memory; others are stored on startup disks and transferred, or *downloaded,* to the printer only when they are needed.

printer port A connector on the computer's back panel marked with a printer icon. A serial port that you can use to attach a printer to the computer, or to serve as an attachment point for an AppleTalk connector.

processor The computer hardware component that performs the actual computations directed by software commands. In microcomputers such as the Macintosh, the processor is a single integrated circuit called a *microprocessor.* See also **central processing unit.**

program A set of instructions describing actions for a computer to perform to accomplish a task, conforming to the rules and conventions of a particular programming language. Computer programs are collectively referred to as *software*. Compare **application program.**

pull-down menu A menu that is hidden until you move the pointer to its title and press the mouse button. See also **menu**, **menu bar,** and **menu title**.

R

RAM See **random-access memory.**

RAM cache A portion of the Macintosh main memory (RAM) that you can set aside for special use. You use the Control Panel to turn the RAM cache on or off.

random-access memory (Abbreviated *RAM*) Memory in which information can be referred to in an arbitrary or random order. RAM usually means the part of memory available for programs and documents that the computer reads from a disk; the contents of RAM are lost when the computer is turned off. Compare **read-only memory.**

read To transfer information from a disk into the computer's memory.

Read Me document A document that is included on some application program and system software disks to provide you with late-breaking information about the product.

read-only memory (Abbreviated *ROM*) Memory whose contents can be read, but not changed. Information is placed into read-only memory only once, during manufacturing. The contents of ROM are not erased when the computer's power is turned off. Compare **random-access memory.**

resource A file that is contained in the System Folder and that the computer uses for its operations. System files and drivers are examples of resources.

ROM See **read-only memory.**

S

save To store information by transferring it from main memory (RAM) to a disk. Work not saved disappears when you turn off the computer or when the power is interrupted. It's a good idea to save your work frequently so that you lessen the risk of losing data.

scanning order The order in which the operating system searches the disk drives for a startup disk. See also **startup disk.**

Scrapbook A desk accessory in which you can save frequently used pictures or passages of text. The Scrapbook can store multiple images. You can cut, copy, or paste images from the Scrapbook into documents created with most application programs. Compare **Clipboard**; see also **cut and paste**.

screen fonts The fonts provided with Macintosh system software; also known as bitmapped fonts. You use a version of the font for each size of type you want to display on the screen. See also **font, printer fonts.**

scroll To move a document or directory in its window so that a different part of it is visible. To scroll through a document or directory, you use the scroll arrows, scroll bars, or the scroll box.

SCSI See **Small Computer System Interface.**

SCSI cable terminator A device used in a SCSI chain to maintain the integrity of the signals passing along the SCSI chain. A SCSI chain should always have two terminators, one at each end of the chain. With some devices, the terminator is built in.

SCSI chain A group of SCSI devices linked to one another through SCSI peripheral interface cables and linked to the SCSI port on the computer through a SCSI system cable.

SCSI port The port on the back panel of the computer to which you connect SCSI devices. SCSI ports and connectors are identified by the SCSI icon.

select To designate where the next action will take place. To select something with a mouse, you click an icon or drag across text or graphics.

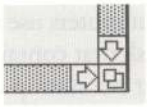
selection The information or items that will be affected by the next command. A selected item is usually highlighted.

serial ports The connectors for peripheral devices that receive data in a serial format (that is, one bit at a time), such as the printer and modem ports on the Macintosh.

Shift-click A technique that allows you to extend or shorten a selection by holding down the Shift key while you select (or deselect). You can also Shift-click multiple items in a list or group to select them all.

SIMM An acronym for *Single In-line Memory Module,* a circuit board that contains RAM chips. SIMMs attach to SIMM sockets on the computer's optional memory expansion board. See also **random-access memory**.

size box A box at the bottom-right corner of some active windows. Dragging the size box resizes the window.



Small Computer System Interface (Abbreviated *SCSI*) A specification of mechanical, electrical, and functional standards for connecting peripheral devices such as certain kinds of hard disks, printers, and optical disks to small computers. Macintosh computers use the SCSI interface for hard disks and other peripheral devices.

source The disk or folder that holds the original of a file to be copied or translated, as in *source disk.*

startup disk A disk with all the necessary program files—such as the Finder and System files contained in the System Folder—to set the computer into operation.

startup drive The disk drive from which you start your computer system.

Sticky Keys An Easy Access feature that lets you type combination keystrokes without actually pressing the keys simultaneously. Sticky Keys is an especially helpful feature for users with impaired motor skills.

System file A file that Macintosh computers use to start up and to provide systemwide information. The System file must be in the System Folder.

System Folder A folder containing the software that Macintosh computers use to start up. A disk that contains a System Folder is a startup disk.

system software Software components that support application programs by managing system resources—such as memory—and input and output devices. Also known as the *operating system.*

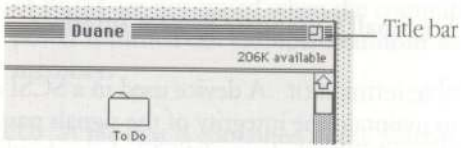
T

TeachText A utility program on the *Macintosh System Startup* disk that functions as a limited word-processing program, used primarily for Read Me files.

terminator See **SCSI cable terminator.**

3.5-inch disk A flexible plastic disk measuring 3.5 inches in diameter and having a rigid plastic jacket. On the Macintosh, 3.5-inch disks are the standard type of floppy disk used. These disks store 400K, 800K, or 1.4 MB of information, depending on the type of disk, disk drive, and formatting used. See also **kilobyte**, **megabyte**.

title bar The horizontal bar, at the top of a window, that shows the name of the window's contents. When the window is active, the title bar is highlighted with parallel lines.



trackball An Apple Desktop Bus input device that lets you move the pointer on the screen by rolling a ball in a fixed socket. Unlike a mouse, a trackball remains stationary on your work surface.

Trash An icon on the desktop that you use to discard documents, folders, and application programs. You can also drag disk icons into the Trash to eject disks.

U

unlock To remove the restriction on the use of a disk or file (through a program or with a tab on the disk) so that it can once again be changed, deleted, or renamed. See also **lock.**

user group A computer club whose members exchange tips and information.

user interface See **interface.**

V

version A number indicating the release edition of a particular piece of software.

video monitor A display device that can receive video signals by direct connection only, unlike a television set, which has a built-in tuner to receive broadcast signals. Sometimes simply called a *monitor*.

virus A malicious program that damages files. Virus programs can be spread though networks and bulletin board services as well as on disks. Virus detection and elimination programs are available through dealers and user groups.

volume A general term referring to a storage device; a source of or a destination for information. Often used in reference to hard disks and file servers. A volume can be an entire disk or only part of a disk.

W, X, Y

window The area that displays information on the desktop; you create and view a document through a window. You can open or close a window, move it around on the desktop, and sometimes change its size, scroll through it, and edit its contents.

write To transfer information from the computer to a destination external to the computer (such as a disk drive, printer, or modem), or from the computer's processor to a destination external to the processor (such as main memory).

Z

zoom box A small box on the right side of the title bar of some windows. Clicking the zoom box expands the window to its maximum size; clicking it again returns the window to its original size.

Index

Numeric Entries

3.5-inch disks (MS-DOS). *See also* disks initializing 260
reading with Apple SuperDrive 259
12-hour clock
setting and location 180
24-hour clock
setting and location 180
400K floppy disk drive. *See also* disks
warning against 1.4 MB floppy disk use in 147
720K. *See also* disks
MS-DOS normal-density floppy disk, initializing 262
800K floppy disk drive. *See also* disks
warning against 1.4 MB floppy disk use in 147
1.4 MB floppy disk. *See also* disks
warning against use in 400K or 800K drives 147

A

About command (Apple menu)
Apple File Exchange, investigating options 268
as clue to where you are 97
Finder, verifying memory amount with 105
accents. *See also* characters
international, adding to any character (table) 252
accessing. *See also* devices; networks; opening menus 40–46
access protection. *See* security
activating. *See* selecting
active window
closing, keyboard shortcut for 35
selecting, keyboard shortcut for 34
acute accent (´). *See also* characters
entering with Option-e 252
ADB. *See* Apple Desktop Bus
adding. *See also* connecting
desk accessories 192
devices 203–215
fonts 192
Macintosh to a network 214
numbers with Calculator desk accessory 293
adjusting. *See* changing
air circulation. *See also* maintenance
importance for heat dispersion 221
Alarm Clock desk accessory
icon, on menu bar 185
setting alarm, date, and time with 181, 183–185
turning off the alarm 185
alert
boxes, responding to 49
silent option 178, 179
sound, setting 178
time, setting with the Alarm Clock desk accessory 181
aligning icons 126–127
alternative operating systems
Apple IIGS, sharing a hard disk with (partitioning) 161

exchanging disks and files with 259–268
MS-DOS
converting files 263–268
reading 3.5-inch disks on the SuperDrive 147, 259
ProDOS for Apple II computers, converting files from 268
altitude
technical specifications 284
amplifier. *See also* audio
attaching to the audio jack 213
APDA
address 289
Apple
service and support information 244
technical information available from 288
Apple*Care* Service Agreement. *See also* maintenance
characteristics and how to obtain 245
Apple Communications Library
description and where to find 289
Apple Desktop Bus (ADB). *See also* devices
ADB port
connecting devices to 211
diagnosing input problems 232
technical specifications 278
devices. *See also* keyboards; mouse connecting 211
icon 3, 211
pin assignments, technical specifications 280
power requirements 212
technical specifications 279
Apple Developer Programs
address 290
technical information available from Apple 288
Apple File Exchange. *See also* networks converting
MS-DOS files and disks 260–266
ProDOS files 268
Apple II computers
converting files with Apple File Exchange 268
Apple IIGS computer. *See also* alternative operating systems
sharing a hard disk with (partitioning) 161
Apple menu. *See also* menus
About command, as clue to where you are 97
About the Apple File Exchange command 268
About the Finder command, verifying memory amount with 105, 205
Alarm Clock desk accessory
icon on menu bar 185
setting alarm, date, and time with 181, 183–185
turning off the alarm 185
Calculator desk accessory, glossary description 293
Chooser desk accessory 133, 140, 237
Control Panel desk accessory. *See* Control Panel desk accessory
Find File desk accessory, locating files by name 123
finding active programs 97, 98
Key Caps desk accessory
viewing optional characters with 250
window 251
Scrapbook desk accessory, editing operations in 95
switching application programs with, in MultiFinder 103
top line of, as clue to where you are 97
AppleShare. *See also* file sharing; networks
file servers 214
using MS-DOS files on 266
PC Card
print servers 214
converting MS-DOS files with 266
AppleTalk network 214. *See also* networks
Apple Technical Library
description and where to find 289
application programs. *See also* desk accessories; files; software
active, finding out which is 97, 98
changing
disks from within 79
folders from within 79
memory allocation for 107, 129
copying, as installation method 76
creating new documents from within 78
deleting 30
ejecting floppy disks from within 150
finding
documents from within, using directory dialog box 79–80
documents from within, using Find File desk accessory 123–125

importance of keeping only one version on hard disks 241
installing 76
locking (and unlocking), with Get Info command 169
managing 75–111
network, sharing on 214
open
at startup, specifying 101
finding out which are 97, 98
opening 7, 78
existing documents from within 79
new documents from within 78
operations common to all, list of 75
organizing 113–129
printing from 137
quitting 7, 78, 110
relationship with system software 58
returning to desktop from 99
specifying for startup (table) 73
starting
by double-clicking 24
by opening documents 80
by opening program icons 78
effect on Trash 127
using MultiFinder 104
switching with MultiFinder 103
arrow keys. *See also* keyboard; keys; Mouse Keys
changing screen brightness level with 191
pointer movement with 55, 249
arrow pointer 22
arrows
scroll, displaying window contents with 36
attaching. *See* connecting
audio. *See also* devices; sound
devices, connecting to audio jack 213
jack, connector type and pin assignments 284
MIDI (Musical Instrument Digital Interface) interface, connecting to modem port 213
automatic repair. *See also* maintenance
with Disk First Aid 224
avoiding trouble. *See* security

B

background. *See also* MultiFinder
pattern of desktop, editing 186
printing, procedures for 140–143
backing up. *See also* copying; maintenance
data, by saving documents 86–96
devices for, SCSI tape drives as 204
disks
floppy 156
hard 164
files 110
by copying individually 115
modification date view useful for 128
software, by copying files containing 115
strategies for 243
bar code readers. *See also* Apple Desktop Bus devices
connecting 211
basic skills. *See* tutorial
battery. *See also* maintenance
clock, changing 227
BCS (Boston Computer Society) address 288
beep. *See also* sound
changing type and volume of alert sound 177–178
Berkeley Macintosh User's Group (BMUG) address 288
binary digit. *See* bit
binary translation
Apple File Exchange use for 263
bit
description 209
glossary definition 292
blinking. *See also* Control Panel
alarm icon in menu bar, meaning of 185
command, meaning of 42
insertion point, rate of 190
menu bar
as silent alert 178, 179
menu item, changing number of blinks 189
question mark icon, meaning of 230
BMUG (Berkeley Macintosh Users' Group)
address 288
bomb icon. *See also* troubleshooting
causes and suggested solutions 236
boot. *See* startup
Boston Computer Society (BCS) address 288
brightness control. *See also* screen
adjusting 191
Brightness section (Control Panel)
adjusting screen brightness with 191

buttons. *See* dialog boxes; keyboard shortcuts; mouse; programmer's switch

C

cables. *See also* devices
daisy chaining SCSI devices with 207
handling precautions 218
keyboard, connecting 3
LocalTalk network 215
mouse, connecting 4
cache. *See* memory; RAM
calculations
inserting into documents, Calculator glossary definition 293
Calculator desk accessory
glossary description 293
calendar icon
changing date with 182
Cancel button
canceling commands with (figure) 47
canceling. *See also* deleting
background printing jobs 142
editing actions with Undo command 85
icon name change with Undo command 50
printing 137
Caps Lock key. *See also* keys
keyboard diagram (figure) 248
cassette tape icon (MacroMaker) 254. *See also* icons
CDEVs (Control Panel devices). *See also* Control Panel
as potential software incompatibility source 241
CD-ROM drives. *See also* disks
connecting 204
cedilla (ç). *See also* characters
entering with Option-c 252
changing. *See also* adding; deleting; editing; installing; resizing
application programs, in MultiFinder 103
beep type and volume of alert sound 177–179
blinking
insertion point 190
menu item 189
clock battery 227
Control Panel, sections and setting 171–201
date 182
desktop patterns 186
disks 149, 150
documents, saving after 88
icon names 50–54
MacroMaker scripts 257
memory allocation for an application program
with Get Info command 107, 129
mouse
click interval 173
tracking 172
networks 215
printers 133
RAM cache size 108
screen brightness 191
SCSI device number 205
sound 177–179
startup disk 165
time of day 180
windows, size and shape 7, 32
characters. *See also* customizing; editing
icon names, maximum allowed in 50
international, entering 252
optional, entering 250
repeating, adjusting the rate of 175
sets, manipulating 247–252
checking
Clipboard contents 82
installed system software 59
memory
amount in a particular system 105
available 106
printer setup 133
startup disk designation 166
check mark
active translator indicated by 265
Chicago font. *See also* fonts
special characters (figure) 251
Chooser desk accessory. *See also* Apple menu; desk accessories
output devices, selecting 133
printers
designating 133
problems with 237
selecting printer port 209
printing, setting up background 140
choosing. *See also* selecting
commands 25, 41
font name, for Key Caps display 252
printers 133
circumflex (^). *See also* characters
entering with Option-i 252
classes. *See* tutorial
cleaning. *See also* housekeeping
mouse 222, 231
system components 222
Clean Up command (Special menu). *See also* housekeeping

aligning icons in a window 126–127
Clear command (Edit menu). *See also* Cut command; Paste command
deleting
selected text in an icon name with 53
text and images permanently 84
Scrapbook use of 96
clearing. *See also* deleting
icons from the desktop 29
system memory 106
text and images from a document 84
Clear key. *See also* keys
function same as Delete key 249
illustration and use (figure) 55
clicking. *See also* choosing; double-clicking; mouse; opening; pointers; selecting
description of 23
double-clicking, description of 24
mouse, as skill taught by the tour disk 7
scroll bar 39
selecting objects by 28
window to make it active 34
Clipboard. *See also* editing; Scrapbook
checking contents of 82
copying text and images to 81
Cut command use of 53
deleting (cutting) text and images to 84
inserting text and images into a document from 82
clock
battery, changing 227
icon, clicking to change time 181
setting 180
system, purpose of 227
technical specifications 278
Close box
closing windows with (figure) 35
Close command (File menu)
closing windows with 35
CloseView program
description and use 274–276
CloseView section (Control Panel)
selecting CloseView features with 274
closing. *See also* opening; quitting
files 86–95
windows 7, 35
cloverleaf. *See* Command key
Command (⌘) key. *See also* keyboard; keys; menus; mouse
illustration and use (figure) 55, 248
keyboard shortcuts, use in 42, 248
Sticky Keys combinations 270
Command-A
selecting all items with 28
Command-C
copying text and images with 81
Command-D
duplicating files with 116
Command-E
ejecting floppy disks with 149
Command-I
displaying information 129
Command-N
creating new folders with 118
Command-O
opening icons with 28
Command-P
initiating printing with 137
Command-period (.)
canceling printing with 137
Command-Q
quitting application programs with 78
Command-S
saving revised documents with 88
Command-Shift-1
ejecting floppy disks with 149, 233
Command-Shift-2
ejecting external floppy disks with 149, 233
Command-Shift-Clear
turning Mouse Keys on and off with 273
Command-V
pasting text and images into documents with 82
Command-W
closing the active window with 35
Command-X
cutting text and images with 84
Command-Z
canceling editing actions with 85
undoing icon name changes with 50
commands. *See also* keyboard shortcuts; menus; Mouse Keys
affecting whole documents. *See* File menu
canceling
with Cancel button 47
with Undo command 85
choosing 25, 41
core, list of 40

creating macros for 253
dimmed, meaning of 41
dots following, meaning of 47
highlighted, meaning of 41
initiated, blinking as indicator of 42
undoing 85
communications. *See* networks
computer
networks, using the Macintosh on 214
operation, problems 229–244
sharing
by use of a network 214
hard disk partition 161
configuration
hardware, recommended minimum for System 6.0 60
connecting. *See also* installing
Apple Desktop Bus (ADB) devices 212
audio devices 213
daisy-chaining
Apple Desktop Bus (ADB) devices 211
SCSI devices 207–208
devices to, Apple Desktop Bus (ADB) ports 211
external
floppy disk drives 211
hard disks 11
keyboard 3, 211
Macintosh to a network 215
MIDI (Musical Instrument Digital Interface) interface 213
modems 210
mouse 3, 211
non-SCSI devices 209
printers 209, 210
SCSI devices 204
Control key. *See also* keys
illustration and use (figure) 55
Sticky Keys combinations 270
Control Panel desk accessory. *See also*
Apple menu; customizing; desk accessories
Brightness section, adjusting screen brightness with 191
changing
insertion point blinking in 190
menu blinking in 189
RAM cache in 108
sections and settings 171–201
CloseView section, description 274
customizing the Macintosh with 171–201
Desktop Pattern area, changing desktop pattern with 187
General section (figure) 180
Keyboard section, adjusting character repetition with 175–176
Mouse section
adjusting mouse tracking with 172
setting the double-clicking speed with 173
setting
date and time in 180
speaker volume in 178
Sound section
adjusting alert sound volume with 177
setting alert sound with 178
Startup Device section, designating a startup disk from 166
Control Panel devices (CDEVs)
as potential software incompatibility source 241
conventions
book, typographical xvi
document version naming 90
converting. *See also* alternative operating systems; translating
electrical power for foreign operation 286
with Apple File Exchange
Apple II ProDOS files 268
Macintosh files into MS-DOS format 263–268
MS-DOS files into Macintosh format 263–268
Copy button (Font/DA Mover window)
copying desk accessories with 195
Copy command (Edit menu)
application program use of (figure) 40
copying text and images 81, 83
Scrapbook use of 96
copying. *See also* adding; backing up;
Clipboard; creating; deleting; editing; moving; saving; Scrapbook desk accessory
application programs, as installation method 76
desk accessories, from one file to another 196
disks, as backup method 156
files
as backup procedure 110, 164
between disks 93, 115
on the same disk 90, 116

fonts, from one file to another 196
graphics between application programs. *See* Clipboard
images
between application programs 83
between documents 82
effect on contents of Clipboard 81
to the Scrapbook 95
text
between application programs 83
between documents 82
effect on contents of Clipboard 81
to the Scrapbook 95
correcting. *See also* changing
problems, strategies for 239
typing errors 87
crash. *See also* troubleshooting
system, strategies for handling 236
creating. *See also* changing; copying; editing
documents
and saving them 86
multiple versions of 90
procedures for 78
files, of desk accessories and fonts 200
folders 7, 118
log, of translated files 267
macros 255
multiple levels of file organization 117–119
startup disks 57–73
startup disks, additional 66–67
systems
customized 63–66
small 68
standard 60
crosshair pointer. *See also* pointers
use in changing Control Panel setup (figures) 175–191
current (electric). *See* power
cursor. *See* pointers
Customize option
Installer program, procedures for 63
customizing. *See also* editing
Macintosh operations 171–201
system software 63–66
Cut command (Edit menu). *See also* deleting; editing; Paste command
application programs use of (figure) 40
compared with Clear command 84
deleting
selected text in an icon name with 53
text and images without losing them 84
Scrapbook use of 96
cut sheet feeder use. *See also* printers setting for ImageWriter 137

D

daisy-chaining 204. *See also* devices
Apple Desktop Bus (ADB) devices 212
SCSI devices 207
damaged data. *See also* troubleshooting
repairing disks with Disk First Aid 224
data. *See also* application programs; documents; editing; files; folders; text; translating
avoiding loss 227
backing up, by saving documents 86–96
deleting
from floppy disks 151
from hard disks 159, 163
loss, as result of reinitializing a disk 11
preventing damage to 227
protecting. *See* backing up; housekeeping; locking; viruses
date. *See also* time
listing the contents of a folder by 128
setting
with Alarm Clock desk accessory 185
with General section (Control Panel) 182
DCA-RFT/MacWrite translator file. *See also* files
converting MacWrite and MS-DOS files 263
delaying. *See also* speeding up
double-clicking 173
insertion point blinking 190
interval
before key repetitions 176
between key repetitions 175
Delete key. *See also* keys
compared with Clear key 249
correcting typing errors with 87
deleting
characters to the left of insertion point with 249
selected text in an icon name with 53

selected text with Macintosh Classic keyboard (figure) 249
text and images permanently 84
illustration and use (figure) 55
deleting. *See also* Clear command; Cut command; editing; erasing; removing; Undo command
application programs 30, 127
desk accessories 196–199
documents 30, 127
files 127
from floppy disks 151
from hard disks 159, 163
fonts 196–199
icons 29
images 84
images, from the Scrapbook 96
selected items 81
text
from the Scrapbook 96
in a document 84
in an icon name 53
deselecting. *See also* selecting
active translators 265
icons 51, 53
selected objects 28
designating. *See also* selecting
items to be opened at startup 69–73
startup disks 165–167
desk accessories. *See also* Apple menu *for a list*; application programs; fonts; *specific desk accessories*; system
creating file of 200
incompatible, as potential cause of system crash 236
list of required and optional 68
managing 192–201
moving 192–201
removing from System Folder 68
sources of 192
specifying for startup (table) 73
switching with MultiFinder 103
desktop. *See also* menus; user interface; windows
aligning icons on 126–127
changing 186–191
clearing icons from 29
editing, basic procedures 50–54
ejecting disks while using 149
moving icons to right side of 127
opening
application programs using MultiFinder 104
documents from 80
pattern, changing 186
printing from 138
putting away items on 126
renaming
disks from 155
documents from 116
returning to from an application program 99
destination disk 156
specifying in Apple File Exchange procedures 264
destroying. *See* deleting
detecting. *See also* security
viruses 227
devices. *See also* Apple Desktop Bus (ADB) devices; audio; cables; CD-ROM; disks; drivers; magnetic tape drives; modems; printers
adding 203–215
connecting
non-SCSI 209–213
SCSI 204–208
diagnosing. *See also* troubleshooting
disks 224
strategies for
general 239
virus 227
dialog boxes. *See also* menus
alert boxes as a type of 49
description and use 47
directory
characteristics and use 47–49
for saving files (figure) 87
moving around folder hierarchy with 121
how to recognize availability of 47
pop-up menu use in (figure) 45
dimensions
system components, technical specifications 279
dimmed commands
meaning of 41
directories. *See also* files; folders
directory dialog box
characteristics and use 45, 47–49
for saving files (figure) 87
moving around folder hierarchy with 121
MS-DOS name for folders 264
obtaining information about 128
printing 139
discarding. *See also* deleting
files 127
icons 7, 29
disconnecting. *See* connecting
disk drive port. *See also* ports

icon 211
pin assignments 283
Disk First Aid. *See also* maintenance
repairing disks with 224
disks. *See also* 3.5-inch disks; 400K disks; 720K disks; 800K disks; 1.4 MB disks; devices; floppy disks; hard disks; high-density disks; SCSI
Apple II, converting 268
backing up 156, 164
CD-ROM drives, connecting 204
copying documents between 93
creating additional startup 66–67
disk drive port, connecting floppy disk drives to 211
disk drives
installing system software on a one-drive system 61
managing 145–169
technical specifications 277
ejecting
by dragging to Trash 149
from within an application program 150
erasing 151, 154, 159, 163
exchanging, with other computers 259–268
floppy, characteristics and use 146–157
fragmentation, reducing 241
hard, characteristics and use 158–167
initializing 11, 151, 159
installing
fonts and desk accessories on 193–196
system software on 60
locking, to protect information 167
managing 145–169
moving fonts and desk accessories between 193–196
MS-DOS, converting 260–268
names, changing 50
naming 151, 159
partitioning 161
problems, causes and suggested solutions 232
ProDOS, converting 268
renaming 155
repairing 224
startup
characteristics of 8
creating 57–73
designating 165
testing 224
displaying. *See also* editing
background patterns, available 187
character sets for fonts 250–251
files, information about 128
icon contents 24
information, with Get Info command 129
window contents by the screenful 39
Document Content Architecture/Revisable Form Text. *See* DCA-RFT/MacWrite translator file
documents. *See also* application programs; editing; files; fonts; text
changing names of 50
copying
on the same disk 115
text and images between 83
to different disks 93
to different folders on the same disk 90
creating 78
creating multiple versions of 90
description, in discussion of application programs 75
editing 81–85
handling, Macintosh tools for 113–129
icons, double-clicking, to start an application program 78
inserting calculation results into, using Calculator 293
locking (and unlocking), with Get Info command 169
naming
correcting typing errors in 87
in application programs that automatically save 88
new 87
version conventions 90
opening
from the desktop 80
from within an application program 79
in a directory dialog box 48
organizing 113–129
pasting text and images into 82
printing 131–143
failure causes and suggested solutions 237
on the network 215
putting in folders, as skill taught by the tour disk 7
renaming
when saving 89
without retaining a version 90

replacing, Alert box verification 92
saving 7, 86–96
specifying for startup 102
specifying for startup, (table) 73
dotted rectangle
significance of 27
double-clicking. *See also* clicking; opening; selecting
directory dialog box items, to open them 48
icons
to open them 28
to start an application program 78
speed, setting 173
windows, to make them active 34
downloadable fonts 135. *See also* fonts
dragging. *See also* copying; discarding; moving
correcting typing errors with 87
ejecting floppy disks by dragging to the Trash 30
files 114
icons 26
mouse, as skill taught by the tour disk 7
objects 25
pointer
in menus 41
to choose a submenu 44
resizing windows with 32
scroll box 38
selecting part of an icon's name by 52
windows 31
drawing. *See* graphics; images
drivers. *See also* devices
adding by copying into System Folder 59
description 58
printer, installing 132
programming, where to find help with 289
removing from System Folder 68
system resources in the System Folder (figure) 58
verifying that what you need is in the System Folder 59
Duplicate command (File menu)
copying documents with 115
duplicating. *See* copying

E

Easy Access program
characteristics and use 270–273
Easy Install option. *See also* installing
Installer program, procedures for 60
editing. *See also*
objects documents; files; folders; text
related actions adding; changing; copying; deleting; saving; undoing
tools Clipboard; Edit menu; Scrapbook desk accessory
desktop
basic procedures 50–54
changing document names with 116
patterns 186
renaming disks 155
documents 81–85
Scrapbook contents 96
text
actions common to all application programs 81–85
selecting while 52
Edit menu. *See also* menus
book use of 96
Paste command
copying text and images with 83
inserting text and images into a document from 82
Scrapbook use of 96
Select All command, keyboard shortcut 28
Show Clipboard command, displaying current Clipboard contents with 82
Undo command
canceling editing actions with 85
undoing an icon name change with 50
800K floppy disk drive. *See also* disks
warning against 1.4 MB floppy disk use in 147
Eject command (File menu)
ejecting floppy disks with 149
ejecting floppy disks 30
after display of "sad Macintosh" icon 230
by dragging to the Trash 149
effect on Trash 127
failure, causes and suggested solutions 233
from within an application program 150
while using the desktop 149
with Eject command 149

electrical safety. *See also* maintenance precautions when setting up 219
electronic communication with other computers. *See* networks
Empty Trash command (Special menu)
discarding items in Trash 127
erasing icon contents with 30
ending. *See also* canceling; closing; housekeeping; quitting
macro recording 257
work sessions, good methods for 110–111
enlarging. *See also* resizing
paper size, implications of 135
windows
by resizing 32
with zoom box 33
entering. *See also* characters; editing
international characters 252
optional characters 250
Enter key. *See also* keys
illustration and use (figure) 55, 249
environment. *See also* Control Panel; desktop; Find File desk accessory
clues to finding out where you are 97
Erase Disk command
(File menu, Apple File Exchange), erasing non-Macintosh disks with 267
(Special menu), erasing disks with 154, 163
erasing. *See also* deleting; editing; Empty Trash command; removing
disks
floppy 151
hard 159, 161, 163
non-Macintosh 267
reinitializing as means of 11
with Erase Disk command 154
items in Trash 127
macros (figure) 256
error messages. *See also* messages; troubleshooting
disk not initialized, causes and suggested solutions 232
not enough memory to start up 241
errors. *See* troubleshooting
Escape key. *See* Esc key
Esc key. *See also* keys
illustration and use (figure) 55, 249
exchanging
disks, with MS-DOS computers 259–268
files, with MS-DOS computers 14, 259–268
expanding. *See* adding
extending. *See also* selecting
selected text 52
external floppy disk drives. *See also* disks; floppy disks; hard disks
connecting 211
ejecting floppy disks from 149, 150

F

fan
technical specifications 278
File menu. *See also* menus
application program use of (figure) 40
Close Command, closing windows with 35
Duplicate command, copying documents with 115
Eject command, ejecting floppy disks with 149
Get Info command
changing memory allocation for a program with 107
displaying information about icons with (procedures) 129
locking application programs and documents with (procedures) 129
locking documents with 169
New command, creating new documents with 78
New Folder command, creating and naming folders with 118
Open command
opening documents with 79
opening icons with 28
starting application programs with 78
Page Setup command, options, choosing 134–136
Print command
initiating printing 136
options 137
Put Away command, putting away items on the desktop with 126
Quit command, quitting application programs with 78, 110
Save As command, saving revised documents by changing the document name 86, 89

Save command
saving documents with 87
saving new documents with 86
saving revised documents by overwriting 88
files. *See also* application programs; documents; folders; networks
backing up 110, 128
converting
Apple II 268
MS-DOS 263–268
ProDOS 268
copying
between disks 115
fonts and desk accessories between 196
desk accessory
creating 200
using 193
discarding 127
duplicating 115
exchanging, with MS-DOS computers 147, 259–268
file system, managing documents with 117–119
finding 120–125
font
creating 200
using 193
handling, Macintosh tools for 113–129
locating by name with Find File desk accessory 123
locking (and unlocking) 129
managing, saving document methods for 86–96
moving 114
into folders 119
naming 86–94, 116
opening in a directory dialog box 48
organizing 113–129
with View menu 128
printing a directory of 139
putting away in original location 126–127
renaming 116
saving
disk problems, causes and suggested solutions 232
in application programs 86–96
Scrapbook, handling 96
sharing across a network 214
translating 263–268
file servers. *See also* networks
AppleShare
characteristics 214
using MS-DOS files on 266
file system
managing documents with 117–119
Finder. *See also* MultiFinder
as active application program, operations available 104
specifying items to be opened at startup 70
Find File desk accessory. *See also* Apple menu; desk accessories
Apple Menu, locating files by name 123
Search Here command, limiting range of file search 125
finding. *See also* accessing; opening
clues to where you are 97
documents 79–80
files 120–125
flipped image. *See also* printers
LaserWriter Page Setup option 135
floppy disks. *See also* disks; hard disks
backing up 156
characteristics and use 146–157
converting
Apple II ProDOS 268
MS-DOS 263–268
creating small systems on 68
drives, connecting external 211
ejecting 30, 149, 150
effect on Trash 127
erasing 154
handling precautions 220
hard disk comparison with 145
initializing 151
installing
CloseView on 275
system software on 61
locking (and unlocking) 167
managing 146–157
MS-DOS format, initializing 3.5-inch 260
problems, causes and suggested solutions 233
renaming 155
repairing 224
starting up from 9
testing 224
folders. *See also* directories; documents; files *for many operations that apply also to folders*
contents, viewing 128
creating 7, 118
handling, Macintosh tools for 113–129
icons for. *See also* icons
in directories 117
in pop-up menus 45
limiting range of file search to one 125

moving
around the hierarchy of 45, 120
files into 7, 119
naming 7, 118
opening in a directory dialog box 48
organizing 113–129
renaming 116
Font/DA Mover. *See also* desk accessories; fonts; system software
creating files of fonts and desk accessories 200
dialog box (figure) 194
installing fonts and desk accessories with 193
moving fonts and desk accessories with 192–201
removing fonts and desk accessories with 196–199
fonts. *See also* desk accessories; documents; editing; text
Chicago font special characters (figure) 251
creating file of 200
downloadable, description 135
installing 192
managing 192–201
removing from System Folder 68
sources of 192
substitution, LaserWriter Page Setup option 135
formatting. *See* initializing disks
400K floppy disk drive. *See also* disks
warning against 1.4 MB floppy disk use in 147
fragmentation
disk, reducing 241
memory, handling 106
frozen pointer. *See also* troubleshooting
causes and suggested solutions 235

G

General section (Control Panel). *See* Control Panel
Get Info command (File menu)
changing memory allocation with 107
displaying information about icons with 128, 129
locking (and unlocking) files with 129, 169
getting started. *See* tutorial
global macros. *See also* MacroMaker
creating 255
glossary
term and concept definitions 291–305
graphics. *See also* images; text
tablets
adjusting mouse tracking for operation with 172
connecting 211
graphic smoothing. *See also* printers
LaserWriter enhancement 135
grave accent (`). *See also* characters
entering with Option-` 252
greater than (>) symbol. *See also* troubleshooting
displayed by inadvertant use of interrupt button 237
grounding. *See also* maintenance
electrical, importance of 219
guidelines
programming and user interface design for the Macintosh, where to find 289

H

handicapped
physically, Easy Access features for 269–275
visually, aids for 274
"happy Macintosh" icon
meaning of 10, 230
hard disks. *See also* disks; floppy disks
backing up 164
compared with floppy disks 145
connecting external 11, 204–208
erasing 11, 163
handling precautions 158
initializing
for the first time 159–160
reinitializing 11
installing system software on 14
internal 145, 158
locking (and unlocking) 167
managing 158–167
naming 159–160
partitioning 161–162
preparing as a startup 11, 166–167
problems, diagnosing 234
renaming 164
repairing 224
starting up from 16
testing 224
hardware. *See also* devices; software
configuration, recommended minimum for System 6.0 60
design, finding information on Macintosh 289
developers, assistance for 290
HD SC Setup program. *See also* troubleshooting

testing SCSI hard disks with 225
headphones. *See also* audio
connecting to the Macintosh 213
help. *See also* troubleshooting; tutorial
Macintosh organizations, user groups, and literature 288
technical information 288
high-density disks. *See* SuperDrive
highlighted commands. *See also* selecting
meaning of 41
highlighting. *See also* selecting
icons 25
removing 28
hints. *See* tips
hooking up. *See* connecting
horizontal tab character. *See* characters
housekeeping. *See also* security
ending work sessions 110–111
files and folders 126–127
maintaining a safe and reliable operating environment 217–245
humidity. *See also* maintenance
optimal for Macintosh operation 221, 284
HyperCard
automatic save feature of 88
tutorial booklet xvii

I, J

I-beam pointer 52. *See also* pointers
inserting text with 54
icons
'?' disk 10, 230. *See also* user interface
active application 102
aligning in a window 126–127
Apple Desktop Bus (ADB) 3, 211
application program, starting by double-clicking 78
bomb, causes and suggested solutions 236
cassette tape (MacroMaker) 254
deselecting 51, 53
desk accessory file 193
discarding
as skill taught by the tour disk 7
into the Trash 29
disk drive port 211
disks
with blinking question mark 10, 230
with 'X' 10, 230
displaying contents of 24, 25
document 78
double-clicking
to open them 28
to start an application program 78
dragging 26
driver (figure) 59
examples of (figure) 21, 59
folders
in directories 117
in pop-up menus 45
Font/DA Mover 193
font files 193
"happy Macintosh" 10, 230
highlighted 25
listing the contents of a folder by 128
modem port (figure) 210
moving
by dragging 26
onto the desktop 126
to right side of desktop 127
to upper-left corner of a window 127
name
changing 50–54
deleting selected text in 53
inserting text in 54
maximum number of characters allowed in 50
selecting text in 50
open folder (figure) 45
opening 7, 28
printer port 209
putting away 126
retrieving from the Trash 30
ringing alarm clock 185
SCSI 207
selecting 25
multiple icons 28
spinning beach ball 13
system file (figure) 58
wristwatch 88
'X' disk, meaning of 10, 230
images. *See also* graphics
copying 81, 83, 95
deleting 84
flipped, LaserWriter Page Setup option 135
inserting, from Clipboard into a document 82
inverted, LaserWriter page setup option 135
pasting into a document 82
saving, Scrapbook desk accessory use for 95
ImageWriter printers. *See also* printers
background printing not available on 140
choosing 134
connecting to 209

network use of 214
page setup options for 136
printing options for 137
problems, causes and suggested solutions 237
information management. *See* managing; organizing
INIT files. *See also* security
as potential cause of software incompatibility 241
initializing disks. *See also* disks
floppy 151
hard 11, 159–160
MS-DOS 3.5-inch 260–262
normal-density, in MS-DOS format 262
initiating. *See also* starting
printing 136
with Command-P 137
input devices. *See* devices
inserting
floppy disks, into a disk drive 148
text. *See also* editing
and images into a document 82
in an icon name 54
insertion point 50. *See also* pointers
changing the blinking rate 190
deleting character to the left of, with Delete key 249
Inside AppleTalk
Apple Communications Library component 289
Inside Macintosh
Apple Technical Library component 289
Installer program
Customize option 63–66
Easy Install option 60
installing system software with 14
installing. *See also* connecting; devices; maintenance; software
application programs 76
CloseView 274
customized systems 63–66
desk accessories 192
fonts 192
MacroMaker 254
network software 214
printer drivers 132
system software 58–69
on the hard disk 14
interfaces. *See also* user interface
MIDI (Musical Instrument Digital Interface), connecting 213
technical specifications 278
interference. *See also* maintenance
handling radio and television xiv, 221
internal disk drives. *See* disks; floppy disks; hard disks
international language characters. *See also* characters
typing 252
interrupt button. *See also* troubleshooting
programmers switch, recovering from inadvertent use 237
introductory tour. *See* tutorial
inverted image. *See also* printers
LaserWriter page setup option 135

K

keyboard. *See also* Apple Desktop Bus (ADB) devices; keys
adjusting character repetition 175, 176
connecting 3, 211
diagnosing cable problems 232
handicapped assistance 270–271
handling spills 219
layouts and character sets 247–252
one-handed use 270
problems, diagnosing 232
shortcuts
canceling printing (Command-period [.]) 137
changing memory (Tab key) 108
Close command (Command-W) 35
Copy command (Command-C) 81
Cut command (Command-X) 84
Duplicate command (Command-D) 116
Eject command (Command-E) 149
ejecting external floppy disks (Command-Shift-2) 149, 233
ejecting floppy disks (Command-Shift-1) 149, 233
for commands, displayed in menu 42
Get Info command (Command-I) 129
New Folder command (Command-N) 118
OK button in alert dialog box (Return key) 49

Open button in directory dialog box (Return key) 48
Open command (Command-O) 28
Paste command (Command-V) 82
Print command (Command-P) 137
printing with Return key 138
Quit command (Command-Q) 78
Save button in Save dialog box (Return key) 89
Save command (Command-S) 88
Select All command (Command-A) 28
turning Mouse Keys on and off with (Command-Shift-Clear) 273
Undo command (Command-Z) 50, 85
special keys, illustration and use 55
technical specifications 279
Keyboard section (Control Panel). *See also* Control Panel; Key Caps desk accessory
changing keyboard operation with 175–176
Key Caps desk accessory. *See also* keys
using 250
keys
arrow, pointer movement with 249
Clear
function same as Delete key 249
illustration and use (figure) 55
Command (⌘)
illustration and use (figure) 55, 248
keyboard shortcut use of 42, 248
Sticky Keys combinations using 270
Control (Ctrl)
illustration and use (figure) 55
Sticky Keys combinations using 270
Delete
correcting typing errors with 87
deleting text and images permanently with 84
Enter
illustration and use (figure) 55, 249
Escape (Esc)
illustration and use (figure) 55, 249
Mouse Keys feature of Easy Access
characteristics and use 272
Option
illustration and use (figure) 55
producing special characters with 248, 250, 251
Sticky Keys combinations using 270
typing accented characters with 252
repeating by holding down 175
Return, keyboard shortcut for Save button in Save dialog box 89
Shift
deselecting objects with 28
entering optional characters with 250
producing uppercase letters with 248
Sticky Keys combinations using 270
special, illustration and use 55
Sticky keys feature of Easy Access
characteristics and use 270
keystrokes
creating macros for 253–258
kind
listing the contents of a folder by 128

L

languages. *See also* characters
entering international characters 252
LAN (local area network). *See* LocalTalk; networks
LaserWriter printers. *See also* printers
connecting 209
network use of 214
Page Setup options for (figure) 135
print dialog box 136
problems, causes and suggested solutions 237
learning to use Macintosh Classic. *See* tutorial
leaving. *See* quitting
left-handed use
of mouse 4
light pens. *See also* Apple Desktop Bus (ADB) devices
connecting 211
linking. *See* connecting
listing. *See also* printing directories
contents of a folder 128

loading. *See also* installing; starting
macros (figure) 256
local area network (LAN). *See* LocalTalk; networks
LocalTalk 215. *See also* networks
locating. *See* finding
location
clues to 97
locking (and unlocking). *See also* security
application programs, with Get Info command 169
disks
as cause of inability to save to disk 233
effect on renaming 50, 116
to protect information 167
documents 169
files
effect on discarding icons 30
effect on renaming 50, 116
with Get Info command 129, 169
floppy disks 168
implications of 167
log
translated files, creating 267

M

Macintosh Basics disk. *See also* tutorial
learning basic skills with 4–7
Macintosh Classic computer
basic operations 21–55
expanding the system 203–215
format, converting non-Macintosh files and disks to 260–268
keyboard (figure) 248
learning to use. *See* tutorial
mouse. *See* mouse
ports. *See* ports
setting up the system 57–73
shutting down, procedures for 113
special keys 55
technical
help, where to find 288
specifications 277–285
user groups, names and addresses 288
MacroMaker program. *See also* customizing; keys
command files, creating and using 253–258
macros. *See also* customizing
creating and using 253–258
MacWrite format
converting to and from MS-DOS 263
magnetic tape drives. *See also* backing up; devices; maintenance
connecting to the Macintosh 204
magnification
screen, increasing and decreasing with CloseView 276
maintenance. *See also* security; troubleshooting
Apple service, information about 244
housekeeping
ending work sessions 110–111
files and folders 126–127
maintaining a safe and reliable operating environment 217–245
managing. *See also* maintenance; organizing
application programs 75–111
desk accessories 192–201
disks and disk drives 145–169
files 86–96
fonts 192–201
multiple application programs 100
printing jobs with PrintMonitor 142
system memory 105
work environment
backing up files 113
maintaining a safe and reliable operating environment 217–245
manipulating
mouse, Mouse Keys as alternative to 272
manual paper feed. *See also* printers
handling with PrintMonitor 142
mathematical symbols
numeric keys used for 249
MC68000 microprocessor
technical specifications 277
memory. *See also* devices; hardware
allocation for application programs 107
changing with Get Info command 129
cache 108
fragmentation, handling 106
insufficient
MultiFinder alert that reports 104
suggested solutions 241
MultiFinder
checking the amount available 106
RAM cache adjusting for efficient use 108
requirements 101, 105

system
clearing 106
managing 105
technical specifications 277
verifying the amount in your system 105
menu blinking. *See also* Control Panel (General section)
adjusting 189
menus. *See also* Apple menu; Edit menu; File menu; Special menu; user interface; View menu; windows
accessing 40
application program use of (figure) 40
choosing commands from 25, 41
commands, avoid use in global macros 255
dialog boxes, recognizing commands that display 47
dots in 47
menu bar
blinking alarm icon in, meaning of 185
blinking as silent alert 178, 179
clues to finding out where you are (figure) 97
titles in (figure) 40
opening 40
pop-up
moving to a new folder level with 122
opening and using 45
seeing items that extend up from the title 46
pull-down, using 40
submenus, using 43
titles (figure) 40
messages. *See also* error messages; troubleshooting
screen, displaying and responding to 47
MIDI (Musical Instrument Digital Interface). *See also* audio
connecting 213
mistakes. *See also* error messages; troubleshooting
strategies for correcting problems 239
typing, correcting 87
modems. *See also* networks
connecting 210
modem port
connecting printers to 210
icon (figure) 210
pin assignments 281
use and advantages 210
modifier keys. *See also* keys
entering optional characters with 250
including in a macro 256
modifying. *See* changing
modulator/demodulator. *See* modems
monitors. *See* screen
mouse. *See also* Apple Desktop Bus (ADB) devices; pointers
arrow keys as alternative for moving 249
button
double-clicking speed 173
use for clicking 23
changing operation of 172–174
cleaning 222
clicks, creating macros for 253
connecting 3
keyboard alternatives to. *See* keyboard shortcuts
left-handed use of 4
Mouse Keys, as alternative to 272
moving (figure) 22
picking up, effect on pointer 23
pointer, changing mouse movement relationship 172
pointing with 22
port
connecting mouse to Apple Desktop Bus (ADB) port 211
problems, diagnosing 231
technical specifications 279
tracking, options for 172
using, as skill taught by the tour disk 7
Mouse section (Control Panel). *See also* Control Panel
adjusting mouse operation with 172–174
moving. *See also* copying; dragging; selecting
around in a window. *See* scrolling
around the folder hierarchy 120
desk accessories 192
files 114
into folders 119
fonts 192
groups 28
icons
by dragging 26
to right side of desktop 127
to upper-left corner of a window 127
insertion point
horizontally, with Tab key 248
to the beginning of the next line, with Return key 249

objects on the screen, by dragging 25
pointer (figure) 22
through levels of folders 45, 122
windows 31, 32
inactive 32
MS-DOS. *See also* alternative operating systems
3.5-inch disks
initializing 260
reading with the SuperDrive 147, 259
files, converting 263–268
MultiFinder. *See also* application programs; desktop; Finder; system software
capabilities 100
clues to finding out where you are 97
copying between application programs 83
installing desk accessories and fonts 196
memory requirements, checking system memory for use with 101, 106
pointer freezing, possible cause 235
RAM cache, adjusting for efficient MultiFinder use 108
required for
printing from the background 140
running multiple applications 100, 104
starting up with multiple open documents 71
specifying items to be opened under 70
switching application programs or desk accessories with 103
turning on and off 101
multiple application programs. *See also* MultiFinder
managing, with MultiFinder 100
Musical Instrument Digital Interface. *See* MIDI

N

name
icon, editing 50–54
listing the contents of a folder by 128
locating files by 123
naming. *See also* renaming
disks
floppy 151
hard 159–160
MS-DOS 262
documents
MS-DOS 265
when saving them 86–94
folders 7, 118
navigating
clues to finding out where you are 97–98
returning to the desktop from application programs 99
networks
AppleShare
file servers 214, 266
print servers 214
AppleTalk, characteristics and use 214
description and use 214–215
files, sharing on 214
file servers, installing 215
LocalTalk 215
modems
connecting 210
modem port 210, 281
printers
connecting to 209
selecting within zones 133
using on 214
print servers, installing 215
virus prevention when using 228
New command (File menu)
creating new documents with 78
New Folder command (File menu)
creating and naming folders with 118
numbers
adding with Calculator desk accessory 293
typing 249
numeric keypad. *See also* keys
keyboard descriptions 249
Mouse Keys defined on 272

O

objects. *See also* icons
manipulating 25
selecting multiple objects in
one area 27
separate areas 28
1.4 MB floppy disk. *See also* disks
warning against use in 400K or 800K drives 147
Open command (File menu)
dialog box, (figure) 47
opening
documents with 79
icons with 28
starting application programs with 78

opening. *See also* accessing; closing; starting
application programs 78
as skill taught by the tour disk 7
with MultiFinder 104
directory dialog box items 48
documents 79, 80
files 48
icons
as skill taught by the tour disk 7
keyboard shortcut for 28
on startup 69–73
with Open command in File menu 28
menus 40
pop-up menus 45
submenus 43
windows, by double-clicking 24
operating systems. *See* alternative operating systems
operating temperature. *See also* maintenance
technical specifications 284
operations. *See also* tutorial
basic Macintosh, descriptions and procedures 21–55
initiating with the mouse 22, 23
optical disks. *See also* disks
connecting CD-ROM drives 204
Option-`
grave accent, entering with 252
optional characters. *See also* characters; keys
entering 250
Option key. *See also* characters; keys
aligning icons with 126–127
closing all windows with 35
illustration and use (figure) 55
producing special characters with 248, 250, 251
Sticky Keys combinations 270
typing accented characters with 252
Option-c
cedilla (ç), entering with 252
Option–Command–Down Arrow
decreasing screen magnification with 276
Option–Command–Up Arrow
increasing screen magnification with 276
Option-Command-X
turning screen magnification on and off with 276
Option-e
acute accent, entering with 252
Option-i
circumflex (^), entering with 252
Option-n
tilde (~), entering with 252
Option-Shift
entering optional characters with 250
optional characters produced in Chicago font (figure) 251
Option-u
umlaut (¨), entering with 252
organizing. *See also* managing
documents 113–129
files
and folders 113–129
with View menu 128
work, using folders for 117–119
outline. *See also* selecting
of object, significance of 25
output devices. *See also* devices
selecting with Chooser 133
overheating. *See also* maintenance
precautions against 221
overlaying. *See* overwriting
overwriting. *See also* replacing
documents, warning about 92
previous document versions, when saving 88
selected text in an icon name 53

P

Page Setup command (File Menu). *See also* printing
choosing options 134–136
paper. *See also* printing
clip, as a hardware troubleshooting tool 234
positioning, LaserWriter page setup options for 135
size, ImageWriter LQ options 136
supply, monitoring the 142
partitioning. *See also* alternative operating systems
hard disks 161–162
Paste command (Edit menu). *See also* Cut command; editing
application program use of (figure) 40
copying text and images with 83
inserting text and images into a document from 82
Scrapbook editing with 96
pasting. *See* Paste command
pattern (desktop). *See also* customizing
changing, bit pattern 186
displaying available 187
editing area of Control Panel 187

peripheral devices. *See* devices
personalizing. *See* customizing
pin assignments. *See also* cables; devices; ports
  technical specifications 280
pixels 188. *See also* screen
playing
  macros (figure) 256
plugging in. *See also* ports; setting up
  Macintosh Classic 2
pointers. *See also* keyboard; mouse
  arrow (figure) 22
  crosshair, use in changing Control Panel setup (figures) 175–191
  diagnosing problems 231
  dragging
    to choose a command 41
    to open a submenu 44
  frozen, causes and suggested solutions 235
  I-beam
    description 52
    inserting text with 54
  manipulating with Mouse Keys 272
  movement, adjusting relative to mouse 172
  moving
    with arrow keys 249
    with mouse 22
  picking up mouse, effect on 23
pointing 23. *See also* selecting
  mouse, as skill taught by the tour disk 7
pop-up menus. *See also* menus
  moving to a new folder level with 122
  opening and using 45
  seeing items that extend up from the title 46
ports 209. *See also* Apple Desktop Bus (ADB) ports; audio; devices; modem port; printer port; SCSI port
  disk drive, pin assignments 283
  modem, pin assignments 281
  non-SCSI, how to recognize 209
  printer, pin assignments 281
  SCSI, pin assignments 282
power (electric). *See also* installing; maintenance
  converting for foreign operation 286
  requirements 212
powering down. *See also* turning off
  effect on Trash 29
precautions. *See also* maintenance
  electrical 219, 222, 286
  floppy disks 220
  hard disks 158
  system upgrade importance 235
preparing. *See also* initializing disks
  application programs for use 76
  hard disk as a startup disk 11
  system software for use 58–69
preventing. *See also* security
  virus damage 227
Print command (File menu). *See also* printing
  initiating printing 136
  options 137
printers. *See also* devices; networks
  choosing 133
  connecting to the Macintosh 209
  drivers, installing 132
  Page Setup options 134–136
  print
    area, implications of large 135
    quality setting for ImageWriter 137
  printer port
    connecting modems to 210
    connecting printers to 209
    pin assignments 281
  problems, causes and suggested solutions 237
  sharing by use of a network 214
printing. *See also* documents
  background printing, procedures for 140
  canceling 137
  direction of, setting for ImageWriter 137
  directories 139
  documents 131–143
    on a network printer 215
  initiating 136
    keyboard shortcut for 137
  keyboard shortcuts
    Command-P 137
    Command-period (.) 137
  monitoring the status of 142
  options 147
  time, setting the 142
PrintMonitor. *See also* managing multiple application programs; MultiFinder
  using 142
print servers. *See also* networks
  AppleShare, characteristics 214
priority
  modem port compared with the printer port 210
  SCSI devices, setting 205
problems. *See also* troubleshooting
  computer operation, causes and suggested solutions 229
  desktop doesn't appear, causes and suggested solutions 230

disk not initialized message 232
disk unusable, causes and suggested solutions 232
disk won't eject, causes and suggested solutions 233
floppy disks, causes and suggested solutions 233
hard disk, causes and suggested solutions 234
interrupt button inadvertently pressed, solution 237
keyboard, causes and suggested solutions 232
memory, not enough 241
mouse doesn't move the pointer, causes and suggested solutions 231
pointer freezing, causes and suggested solutions 235
printers, causes and suggested solutions 237
screen, causes and suggested solutions 229
software, symptoms, causes and suggested solutions 236
startup, causes and suggested solutions 234
strategies for solving 239
viruses, strategies for preventing 227
problem solving. *See also* troubleshooting
general strategies for 239
processor
technical specifications 277
ProDOS operating system. *See also* alternative operating systems
for Apple II computers, converting files from 268
products
new, where to view demonstrations 288
program. *See* application programs; system software
programmer's switch
description and use 285
interrupt button, recovering from inadvertent use 237
reset button, consequences of using 285
programming
help with 289
propeller (⌘) key or symbol. *See* Command key
protecting. *See* security
pull-down menus. *See also* menus
using 40
Put Away command (File menu). *See also* closing; housekeeping; quitting
putting away items on the desktop with 126

Q

question mark (?) disk icon. *See also* icons; troubleshooting
meaning 10, 230
Quit command (File menu)
copying between application programs, use of 83
quitting application programs with 78, 110
quitting. *See also* canceling; closing; stopping
appli disk 6

R

radio
interference, handling xiv, 221
RAM (random-access memory). *See also* memory
cache
MultiFinder use 108
setting in Control Panel (General section) 108
technical specifications 277, 280
random-access memory. *See* RAM
read-only memory. *See* ROM
recording
keystrokes in a macro 253
recovery. *See also* troubleshooting
crash 236
rectangle
dotted, significance of 27
reducing. *See also* enlarging; resizing
paper size 135
window size 32
removing. *See also* deleting; erasing
desk accessories 68, 196–199
device drivers 68
fonts 68, 196–199
highlighting 28
MacroMaker 254
renaming. *See also* editing; naming
disks
floppy 155
hard 164
documents 89, 116
without retaining a version under the old name 90
icons 50
non-Macintosh files 267
repairing. *See also* troubleshooting
disks 224
repeating characters. *See also* characters; customizing
setting the rate and delay before 175
replacing. *See also* copying; editing
desktop patterns 188

documents, Alert box verification 92
selected text, in an icon name 53
reset button
programmer's switch, consequences of using 285
resizing. *See also* enlarging; reducing
windows 32, 39
Restart command (Special menu)
changing startup device with 167
Restore settings command (File menu, Apple File Exchange) 267
restoring. *See also* troubleshooting
editing actions 85
translator setting 267
retrieving. *See also* troubleshooting
icons from the trash 30
returning. *See also* navigating
to the desktop from application programs 99
Return key. *See also* keys
keyboard shortcut for Save button in Save dialog box 89
moving the insertion point to the next line 249
reversing. *See also* editing
Undo command 85
Revisable Form Text format. *See* DCA-RFT/MacWrite translator file
revised. *See also* editing
documents, saving methods 88
ringing alarm clock icon. *See also* Alarm Clock desk accessory; icons
significance 185
ROM (read-only memory). *See also* memory
technical specifications 277
RS-232. *See also* devices; ports; SCSI
devices not compatible with SCSI port 282
RS-232/RS-422 serial ports, technical specifications 278

S

"sad Macintosh" icon. *See also* icons
meaning of 230
Save As command (File menu)
saving revised documents by changing the document name 86, 89
Save command (File menu)
saving
new documents with 86
revised documents with, by overwriting previous versions 88
saving. *See also* backing up; editing; overwriting
automatically, HyperCard feature 88
desk accessories 196–199
documents 7, 86–96
files
disk problems, causes and suggested solutions 232
methods for 86–96
fonts 196–199
icon name changes 53
images, Scrapbook desk accessory use for 95
information for quick retrieval. *See* Clipboard; Scrapbook desk accessory
macros 258
text, Scrapbook desk accessory use for 95
translator settings 267
scanner. *See also* devices; SCSI
connecting to the Macintosh 204
scanning order
description 165
Scrapbook desk accessory. *See also* desk accessories; editing
editing operations in 95
saving text and images in 95
screen. *See also* devices
adjusting pointer movement on, relative to mouse 172
changing the brightness level of 191
cleaning 222
magnification, increasing and decreasing with CloseView 276
messages, responding to 47–49
problems, causes and solutions 229
saving
application programs for 229
precautions 219
viewing, enhancing through magnification 274
scripts (macro). *See also* MacroMaker program
description of 253
recording (figure) 256
scroll. *See also* scrolling; user interface; windows
arrows, displaying window contents with 36
bar, description and use 36, 39
box, description and use 36, 38

scrolling. *See also* moving; navigating
as skill taught by the tour disk 7
operations 36–39
to display window contents 36
SCSI (Small Computer System Interface). *See also* devices
devices, connecting 204–215
ID number duplicated, as cause of failure to recognize a hard disk 235
interface, technical specifications 278
SCSI port
connecting Personal LaserWriter SC to 209
pin assignments 282
Search Here command (Find File desk accessory)
limiting range of file search 125
searching. *See also* Find File desk accessory
clues to finding out where you are 97–98
for files 120–125
security
data. *See* backing up; copying; locking; maintenance; saving
hardware. *See* maintenance
problem avoiding and solving. *See* error messages; maintenance; problems; tips; troubleshooting; warnings
software. *See* backing up; locking; viruses
theft and illegal access. *See* access protection; locking; networks; passwords; viruses
seeing. *See* viewing
Select All command (Edit menu)
keyboard shortcut for 28
selected
menu item blinking rate, adjusting the 189
objects, deselecting 28
text, extending 52
selecting. *See also* choosing; deselecting; editing
commands 41
desk accessories to install 193
fonts to install 193
icons and objects 25
multiple
desk accessories or fonts 195
files for translation 265
icons and objects 27, 28
startup items 71
printers 133
text
in an icon name 50
while editing 52
windows 34
serial ports. *See also* modem port; ports; printer port; RS-232
description 209
technical specifications 278
transmission through 209
servers. *See* file servers; print servers
service. *See also* maintenance
Apple, information about 244
Set Startup command (Special menu)
specifying items to be opened with (figure) 69–73
turning MultiFinder on with 101
setting. *See* changing
setting up. *See also* connecting
Macintosh Classic 119
networks 215
pages 134–136
printers 132
system 218
software 58–69
720K
MS-DOS normal-density floppy disk, initializing 262. *See also* disks
sharing
computers and other resources with network users 214
Shift-clicking 28. *See also* selecting
Shift key. *See also* keys
deselecting objects with 28
entering optional characters with 250
producing uppercase letters with 248
Sticky Keys combinations using 270
Shift–Right Arrow
extending selected text with 52
Shift–Up Arrow
extending selected text with 52
shortcuts
keyboard. *See* keyboard shortcuts
Show Clipboard command (Edit menu)
displaying current Clipboard contents with 82
Shut Down command (Special menu)
shutting down with 17, 111
shutting down. *See also* housekeeping; turning off
before turning off, importance of 17
effect on Trash 29, 127
Macintosh Classic 17, 111

SIMM (Single In-line Memory Modules). *See also* memory
technical specifications 280
size. *See also* resizing
box, resizing windows with (figure) 32
desk accessories, obtaining the combined 195
font sizes, installing multiple 195
fonts, obtaining the combined 195
listing the contents of a folder by 128
technical specifications 279
windows, changing the size of 7, 32
skills. *See* tutorial
slowing down. *See* delaying; speeding up
Small Computer Systems Interface. *See* SCSI
small systems. *See also* customizing
creating 68
smoothing. *See also* printers
graphic and text, LaserWriter enhancement 135
socket. *See* ports
software. *See also* application programs; desk accessories; security; system software
developers, assistance for 290
problems
bomb icon, causes and suggested solutions 236
pointer freezing, causes and suggested solutions 235
system, installing on the hard disk 14, 58–69
version, incompatibilities as source of problems 240
sound. *See also* audio
changing type and volume of alert 177–179
connecting audio devices 213
generator, technical specifications 278
Sound section (Control Panel). *See also* Control Panel
changing sound setup with 177–179
source disk
description 156
speaker. *See also* audio; sound
built-in, adjusting the alert sound volume of 177
special keys. *See also* characters; keys
illustration and use 55
Special menu. *See also* menus
Clean Up command, aligning icons in a window with 126–127
Empty Trash command
discarding items in Trash 127
erasing icon contents with 30
Erase Disk command 154, 163
Restart command, changing startup device with 167
Set Startup command
specifying items to be opened with (figure) 69–73
turning MultiFinder on with 101
Shut Down command
shutting down with 17, 111
specifying. *See* designating
speeding up
application programs, using the RAM cache 108
double-clicking 173
hard disks, by reducing fragmentation 241
insertion point blinking 190
interval before key repeat 176
key repeat rate 175
mouse tracking 172
printing, ImageWriter options for 137
spinning beach ball icon. *See also* icons
during initialization 13
starting. *See also* initializing disks; setting up
application programs 24, 78
by opening documents 80
effect on Trash 127
with MultiFinder 104
Macintosh
preparing system for use 57–73
with MultiFinder on 101
macro script recording (figure) 256
operations with the mouse 22
printing 136
tour disk 5
starting up
from a floppy disk 9
from a hard disk 16
startup. *See also* starting; starting up
disks
characteristics 8
checking during system software preparation 59
creating 57–73
designating 165
making more room on 196
preparing a hard disk as 11
problems with, causes and suggested solutions 234

removing fonts and desk accessories, restrictions 197
specifying, items to be opened at 69–73
Startup Device section (Control Panel)
designating a startup disk from 166
stereo miniplug. *See also* audio
connecting audio devices with 213
Sticky Keys
Easy Access feature, characteristics and use 270–271
stopping. *See also* canceling; starting
macro recording 257
tour disk 6
work sessions, good methods for 110–111
storage media. *See also* disks
disks, managing 145–169
storage temperature. *See also* maintenance
technical specifications 284
storing. *See also* backing up; copying; maintenance
files, in folders 119
floppy disks 220
macros (figure) 256
strategies. *See also* troubleshooting
problem solving 239
submenus. *See also* menus
opening and using 43
sunlight. *See also* maintenance
precaution against 221
SuperDrive. *See also* disks
characteristics and use 146–147
initializing an MS-DOS disk in 260
technical specifications 277
support. *See also* troubleshooting; tutorial; user groups (Macintosh)
Apple, information about 244
swapping. *See also* copying; saving
disks 150
Scrapbook files 96
switching
application programs or desk accessories, with MultiFinder 103
disks 150
off the computer
effect on Trash 127
importance of shutting down before 17
on the computer 5. *See also* starting up
system
clock, purpose of 227
components
cleaning 222
setting up 218
crash, strategies for handling 236
creating
customized 63–66
small 68
standard 60
files
description and icon (figure) 58
on current startup disk, renaming not possible for 116
verifying what you need 59
memory
clearing 106
managing 105
software
installing 14, 58–69
network, using 215
purpose 58
updating 69
upgrade, importance of 235
verifying contents of installed 59
startup, specifying items to be opened at 69–73
System 6.0
minimum recommended configuration 60
**System Additions* disk
installing system software with 15
needed for installation 60
**System Startup* disk
initializing hard disks with 12
installing system software with 14
needed for installation 60
System Folder
contents, description and verification (figure) 59
driver installation, printers 132
importance of keeping only one version on hard disks 241
PrintMonitor location 142
required for a startup disk 8

T

Tab key. *See also* keys
changing memory allocation with 108
moving the insertion point to the right with 248
tablet
graphics. *See also* Apple Desktop Bus (ADB) devices
adjusting mouse tracking for operation with 172
connecting 211

tailoring. *See also* customizing
system software 63
tape backup. *See* magnetic tape drives
technical documentation
Macintosh, where to find 288
technical specifications
Macintosh Classic 277–285
telecommunications. *See also* networks
linking the Macintosh in telephone networks 210
telephone
networks, linking the Macintosh into 210
television. *See also* maintenance
interference on, handling xiv, 221
temperature. *See also* maintenance
operating, technical specifications 284
safe range 221
storage, technical specifications 284
terminating. *See also* canceling; quitting; stopping
work sessions, good methods for 110–111
terminators. *See also* cables; devices; SCSI
guidelines for using with SCSI devices (table) 208
required for daisy-chaining SCSI devices 207
testing. *See also* troubleshooting
disks 224
text. *See also* documents; editing
copying 81, 83, 95
deleting 84
in an icon name 53
editing 81
desktop 50
icon name 50
inserting, in an icon name 54
pasting, into a document 82
saving, Scrapbook desk accessory use for 95
selecting, while editing 52
smoothing, LaserWriter capability 135
translation, Apple File Exchange use for 263
3.5-inch disks (MS-DOS)
initializing 260
reading with Apple SuperDrive 259. *See also* disks
throwing away. *See also* deleting
unwanted applications, documents, and icons in Trash 29
tilde (~). *See also* characters
entering with Option-n 252
time. *See also* date
changing 180
management. *See* Alarm Clock desk accessory
setting
alert with Alarm Clock desk accessory 183
internal clock 180
time of day with the Alarm Clock desk accessory 181
tips. *See also* troubleshooting
Apple Desktop Bus (ADB) power requirement limits 212
memory allocation 108
minimum hardware configuration 60
shutting down 111
switching on SCSI devices before computer 208
system software upgrade, importance of 235
title. *See also* menus
pop-up menus, meaning of 45
title bar. *See also* desktop; menus; user interface; window
meaning of 31
moving windows with 31
tour disk. *See also* tutorial
learning basic skills with 4–5
trackball. *See also* Apple Desktop Bus (ADB) devices
connecting 211
tracking. *See also* pointers
mouse, adjusting 172
transferring. *See* copying; moving
translating. *See also* alternative operating systems
files 263
translator. *See also* Apple File Exchange
active
deselecting 265
saving 267
selecting 264, 265
files, description 260
options, saving 267
Trash icon. *See also* icons
discarding
files by dragging to the 127
icons by dragging to the 7, 29
ejecting floppy disks by dragging to 30, 149
meaning 29
triangle. *See also* menus
in menu, meaning of 43
troubleshooting. *See also* error messages; problems; security; tips; warnings
Apple service, information about 244
keyboard, handling spills 219
maintenance and 217–245

problems, causes and solutions 229–243
strategies 229
turning off. *See also* shutting down
alarm 185
Macintosh
effect on Trash 29
importance of shutting down before 17
turning on. *See also* starting up
Macintosh alarm 184
MultiFinder 101
tutorial. *See also* user groups (Macintosh)
basic editing on the desktop 50–54
basic skills 21–55
tour disk use as 4–5
classes, where to find Macintosh 288
getting started 1–19
getting started, basic skills 21–55
HyperCard tutorial booklet xvii
responding to screen messages 47–49
tour disk, learning basic skills 4–7
using
menus 40–46
mouse 22–25
special keys 55
working with
icons 25–30
windows 31–39
12-hour clock
setting and location 180
24-hour clock
setting and location 180
typing. *See also* characters
accented characters 252
characters repeatedly, adjusting for 175–176
difficulties, using Easy Access to help with 270
errors, correcting 87
touch, adjusting for 176

U

umlaut (¨). *See also* characters
entering using Option-u 252
Understanding Computer Networks
Apple Communications Library component 289
Undo command (Edit menu). *See also* changing; deleting; editing
canceling
editing actions with 85
icon name changes 50
reversing 85
undoing. *See* editing; Undo command (Edit menu)
unlocking. *See* locking
unreadable disk. *See also* troubleshooting
repairing with Disk First Aid 224
updating. *See also* editing; installing
system software 69, 235
uppercase letters. *See also* characters
typing with Caps Lock key 248
user groups (Macintosh)
names and addresses 288
user interface. *See* desktop; icons; menus; mouse; title bar; windows

V

verifying
memory amount in a particular system 105
System Folder contents 59
versions. *See also* editing; saving
document, creating 90
Scrapbook, handling of 96
system software 69, 236, 240
video display. *See also* graphics
technical specifications 278
viewing. *See also* accessing
contents of a folder 128
desk accessory sizes 195
fonts and font sizes 195
optional characters with Key Caps 250
window contents by scrolling 36
View menu. *See also* menus
displaying information about directory contents with 128
viruses. *See also* security
strategies for prevention and elimination 227–228
vision
aids for visually handicapped 274
volume. *See also* audio; naming
alert sound, changing 177
name, for MS-DOS disks 262

W

warnings. *See also* troubleshooting
against
connecting RS-232 devices to SCSI ports 282
using 1.4 MB floppy disks in 400K or 800K drives 147

alert box use for 49
automatic emptying of Trash 29, 127
data loss
during disk initialization 151
during partitioning 161
if SCSI drives have duplicate IDs 205
electrical safety 219
handling system components 218
hard disk care 158
loss of data when reinitializing disks 11
memory, technical specifications 280
overwriting documents 92
screen damage 219
switching off computer before adding or removing devices 204
weight
system components, technical specifications 279
where you are on the Macintosh
finding out 97
windows. *See also* desktop; folders; user interface
activating 34
aligning icons in 126–127
changing size of 7, 32
closing 7, 35
displaying contents by the screenful 39
enlarging with zoom box 33
listing the contents of 128
moving 31
icons to upper-left corner of 127
inactive 32
opening, by double-clicking 24
printing a directory of the files in 139
resizing 32, 33, 39
scrolling in 36
viewing contents by scrolling 36
work sessions. *See also* housekeeping
good methods for ending 110–111
workstations. *See also* networks
computers in networks 214
wristwatch icon. *See also* icons
during save operation 88
write-protect. *See* locking

X, Y

'X' disk icon. *See also* troubleshooting
meaning 10, 230

Z

zones (network). *See also* networks
selecting printers within 133
zoom box. *See also* resizing
enlarging windows with 33

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